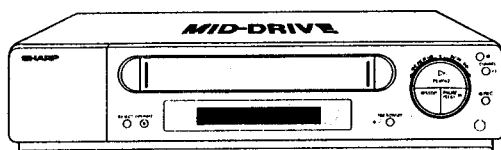


SHARP SERVICE MANUAL

S04F2VC-MH80/

VHS VIDEO CASSETTE RECORDER



MODELS **VC-MH80** **VC-MH90**

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

CONTENTS

	Page
1. SPECIFICATIONS	3
2. DISASSEMBLY AND REASSEMBLY	4
3. FUNCTION OF MAJOR MECHANICAL PARTS	8
4. ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS	10
5. ELECTRICAL ADJUSTMENT	34
6. MECHANISM OPERATION FLOW CHART AND TROUBLESHOOTING GUIDE .	43
7. TROUBLESHOOTING	49
8. BLOCK DIAGRAMS	67
9. CIRCUIT DIAGRAM AND PWB FOIL PATTERN	75
10. REPLACEMENT PARTS LIST	105
11. EXPLODED VIEWS	127
12. PACKING OF THE SET	131

PRECAUTIONS IN PART REPLACEMENT

*When servicing the unit with power on, be careful to the section marked white all over.
This is the primary power circuit which is live.*

When checking the soldering side in the tape travel mode, make sure first that the tape has been loaded and then turn over the PWB with due care to the primary power circuit.
Make readjustment, if needed after replacement of part, with the mechanism and its PWB in position in the main frame.

(1) Start and end sensors: D710 and D709.

Insert the sensor's projection deep into the upper hole of the holder (LHLDZ1893AJ00). Referring to the PWB, fix the sensors tight enough.

(2) Photocoupler RH-FX0005GEZZ: IC901

Refer to the symbol on the PWB and the anode marking of the part.

(3) Cam switches A and B (RH-PX0231GEZZ) : D714 and D713.

Adjust the notch of the part to the white marker of the symbol on the PWB. Do not allow any looseness.

(4) Take-up and supply sensors (RH-PX0232GEZZ): D712 and D711.

Be careful not to confuse the setting direction of the parts in reference to the symbols on the PWB. Do not allow any looseness.

(5) Diode bridge (RH-DX0083GEZZ): D901.

Adjust the + marking of the part to the symbol's cathode marking on the PWB.

1. SPECIFICATIONS

Format:	VHS PAL/SECAM/MESECAM/NTSC standard (VC-MH80) VHS PAL/MESECAM/NTSC standard (VC-MH90)
Video recording system:	Two rotary heads, helical scan system
Video signal:	PAL /SECAM/NTSC colour and B/G,I, D/K, M signals, 625 lines
Recording/playing time:	240 min max. with SHARP E-120 tape (LP mode) 480 min max. with SHARP E-240 tape (LP mode) 480 min max. with SHARP T-160 tape (EP mode)
Tape width:	12.7 mm
Tape speed:	23.39 mm/s (PAL SP) 11.70 mm/s (PAL LP) 33.35 mm/s (NTSC SP) 16.68mm/s (NTSC LP) 11.12mm/s (NTSC EP)
Antenna:	75 ohm unbalanced
Receiving channel:	VHF Channel 1A-S20 UHF Channel E21-US83 (VC-MH80) UHF Channel E21-E69 (VC-MH90)
RF converter output signal:	VHF Channel E30-E39 (preset to CH E39 (VC-MH80) or CH E36 (VC-MH90))
Power requirement:	AC110-240V, 50/60Hz
Power consumption:	Approx. 20 W at AC220V/50Hz (VC-MH80) Approx. 22W at AC220V/50Hz (VC-MH90)
Operating temperature:	5°C to 40°C
Storage temperature:	- 20°C to 60°C
Weight:	Approx. 4.5 kg
Dimensions:	430 mm (W) × 340 mm (D) × 96 mm (H)
VIDEO	
Input:	0.5 - 2.0 Vp-p, 75 ohm
Output:	1.0 Vp-p, 75 ohm
S/N ratio:	45 dB (PAL SP)
Horizontal resolution:	250 lines (PAL SP)
AUDIO	0 dBs = 0.775 Vrms
Input:	Line: -8 dBs, 47k ohm
Output:	Line: -8 dBs, 1k ohm
Hi-Fi dynamic range:	85dB type
Normal S/N ratio:	40dB
Frequency response:	(Hi-Fi) 20Hz~20kHz (Normal) 80Hz~5kHz
Accessories included:	75 ohm coaxial cable Operation manual Infrared remote control Battery (2pcs.) AC plug adaptor (VC-MH90) AV cable

As part of our policy of continuous improvement, we reserve the right to alter design and specifications without notice.

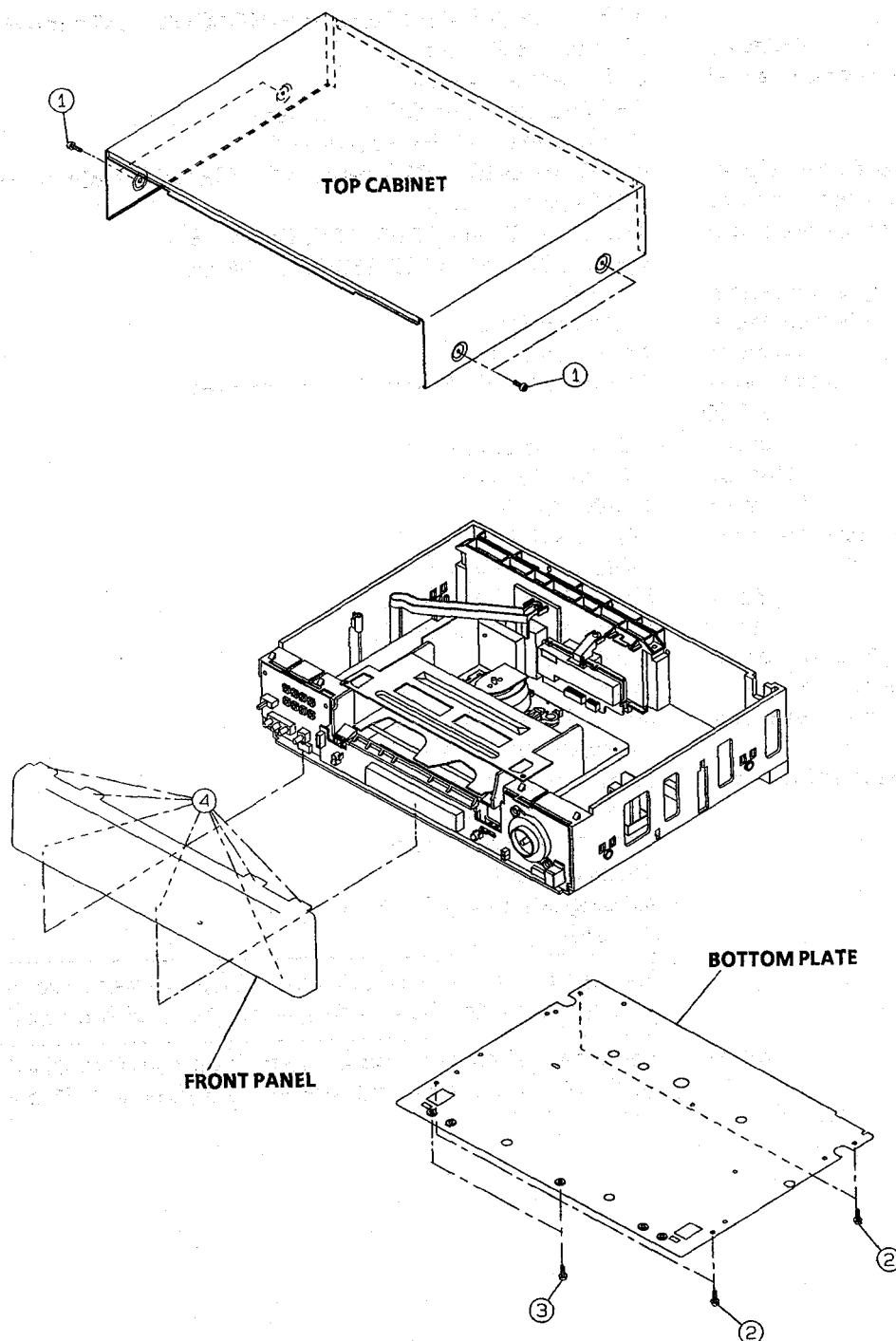
Note: The antenna must correspond to the new standard DIN 45325 (IEC 169 - 2) for combined UHF/VHF antenna with 75 ohm connector.

2. DISASSEMBLY AND REASSEMBLY

2-1 DISASSEMBLY OF MAJOR BLOCKS

- TOP CABINET** : Remove 4 screws ①.
- BOTTOM PLATE** : Remove 5 screws ② and 2 screws ③.
- FRONT PANEL** : Remove 7 clips ④.
- TIMER PWB** : Remove 1 screw ⑤. Disconnect the FFC from the sockets ⑥ and ⑦. Remove 3 clips ⑧.

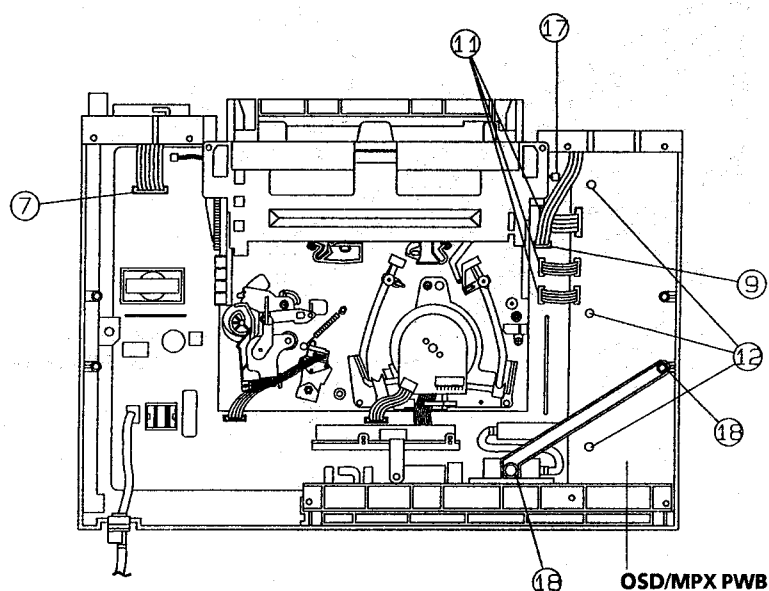
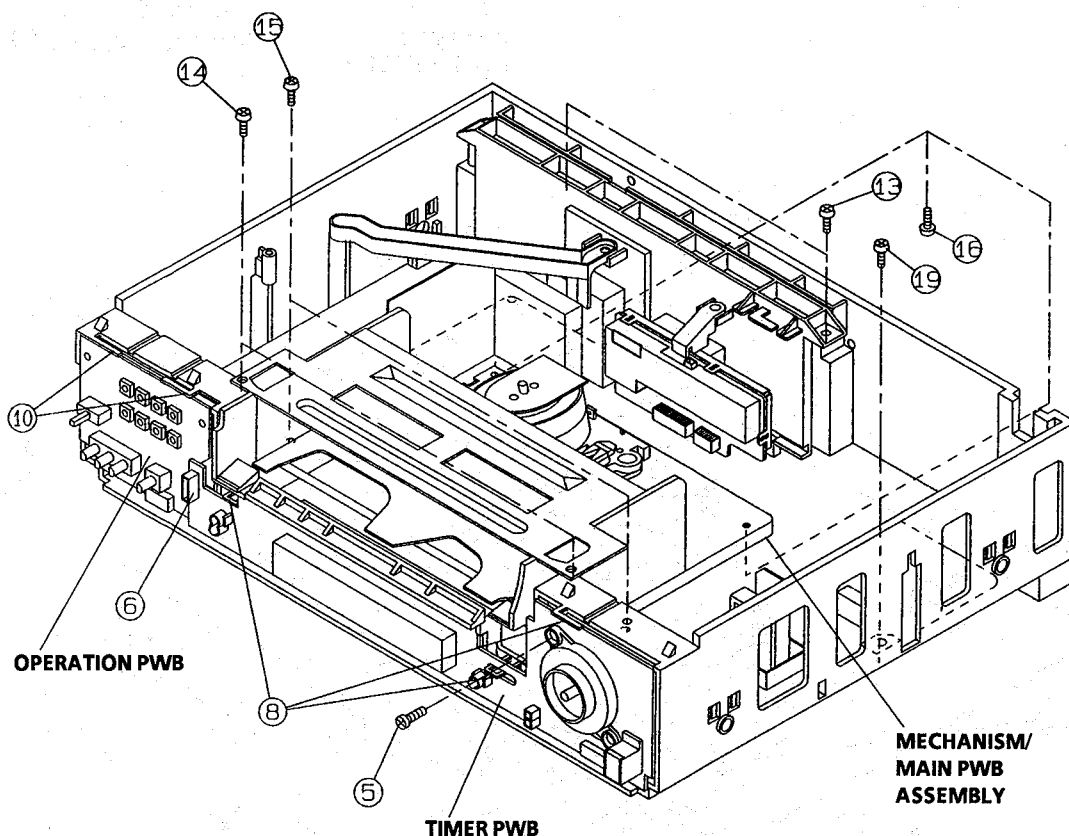
- OPERATION PWB** : Disconnect the FFC from the socket ⑨. Remove 2 clips ⑩.
- OSD/MPX PWB** : Disconnect the FFCs from the 3 sockets ⑪. Take out 3 holders ⑫.



**MECHANISM/
MAIN PWB
ASSEMBLY**

: Remove 2 screws ⑬, 2 screws ⑭ and 2 screws ⑮. Remove 2 screws ⑯ from below the main frame. Take out the socket ⑰. Remove 2 screws ⑱ and take out the tuner holder. Remove 1 screw ⑲.

Lift the antenna terminal block and take the mechanism/main PWB assembly out of the main frame. Be careful not to hit the REC TIP switch located below the cassette controller.



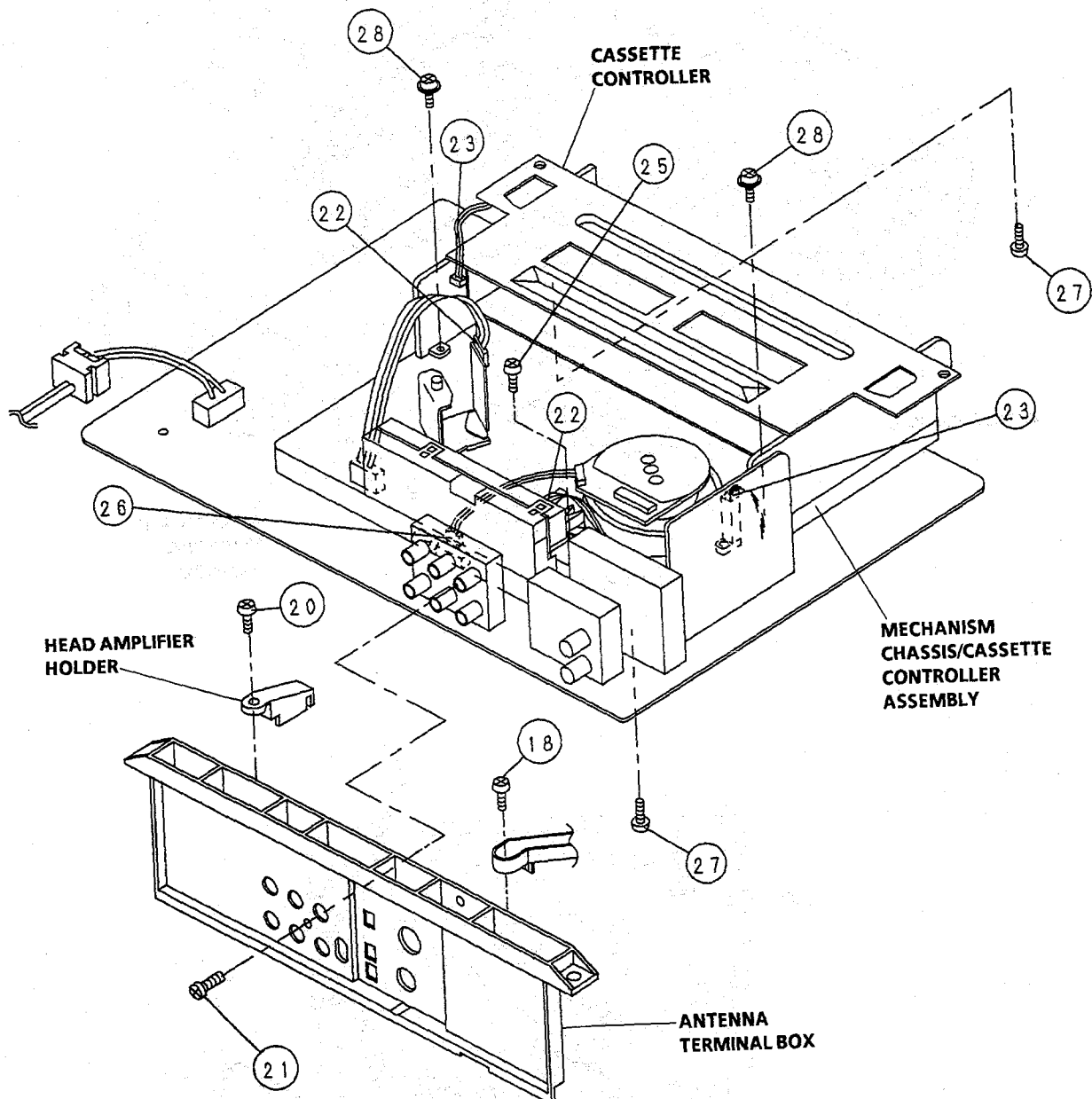
VC-MH80
VC-MH90

**HEAD AMPLIFIER
HOLDER** : Remove 1 screw ②①.

**ANTENNA
MECHANISM
CHASSIS/
CASSETTE
CONTROLLER
ASSEMBLY** : Remove 1 screw ②①.
: Disconnect the FFCs from 2
sockets ②②.
Disconnect the connectors
from 2 sockets ②③. Take the
relay PWB out of the socket ②④

Remove 1 screw ②⑤ and detach
the head amplifier unit.
Disconnect the FFC from the
socket ②⑥. Remove 2 screws ②⑦
from behind the main PWB.
Lift the mechanism chassis/
cassette controller assembly
vertically to take it out of the
main PWB.
: Remove 2 screws ②⑧.

**CASSETTE
CONTROLLER**



2-2 PRECAUTIONS IN REASSEMBLING

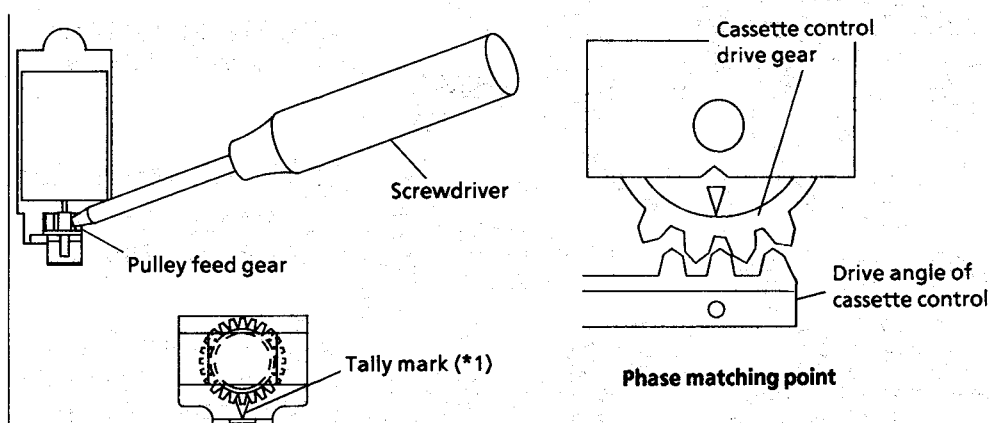
MOUNTING THE CASSETTE CONTROLLER

Initial setting is indispensable before placing the cassette controller in the mechanism. The initial setting is made in two ways; electrical and mechanical.

Electrical setting:

- (1) Make a short-circuit between TP5001 and TP5002 of the TP plug (TP500*) which is on the timer PWB.
- (2) Plug in the AC power cord and make sure the mechanism is in the initial setting position (*1).
- (3) Unplug the AC power cord. Remove the above short-circuit.

NOTE: This method is used when the mechanism has been already set on its PWB.



Mechanical setting:

Turn the loading motor's pulley feed gear using a screwdriver and be sure that the mechanism is back to its initial setting position (*1). Now place the cassette controller in position. (This method is applicable for the mechanism alone.)

COUPLING THE MECHANISM TO THE PWB

Match the mechanism's projections with the two symbols (round reference and oval sub-reference) on the main PWB. Place the mechanism straight down in position with due care so that the mechanism chassis's outer edges should not damage any parts nearby.

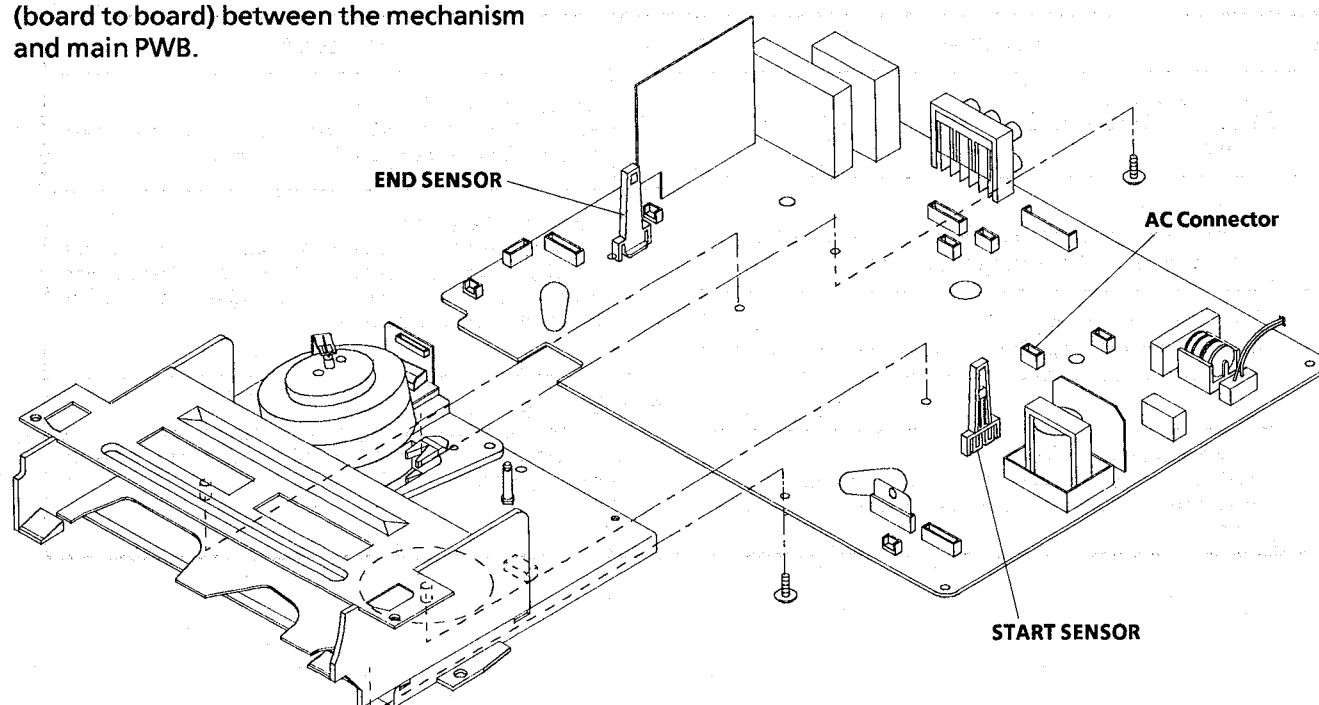
Tighten up the two screws (one for fixing the mechanism and the head amplifier shield, the other on the main PWB's soldering side and located near the loading motor) to fix the mechanism and main PWB. Reconnect the FFC cables (AG, AD and ZA) and harnesses (AE and AL) between the mechanism and main PWB.

Parts to pay attention to:

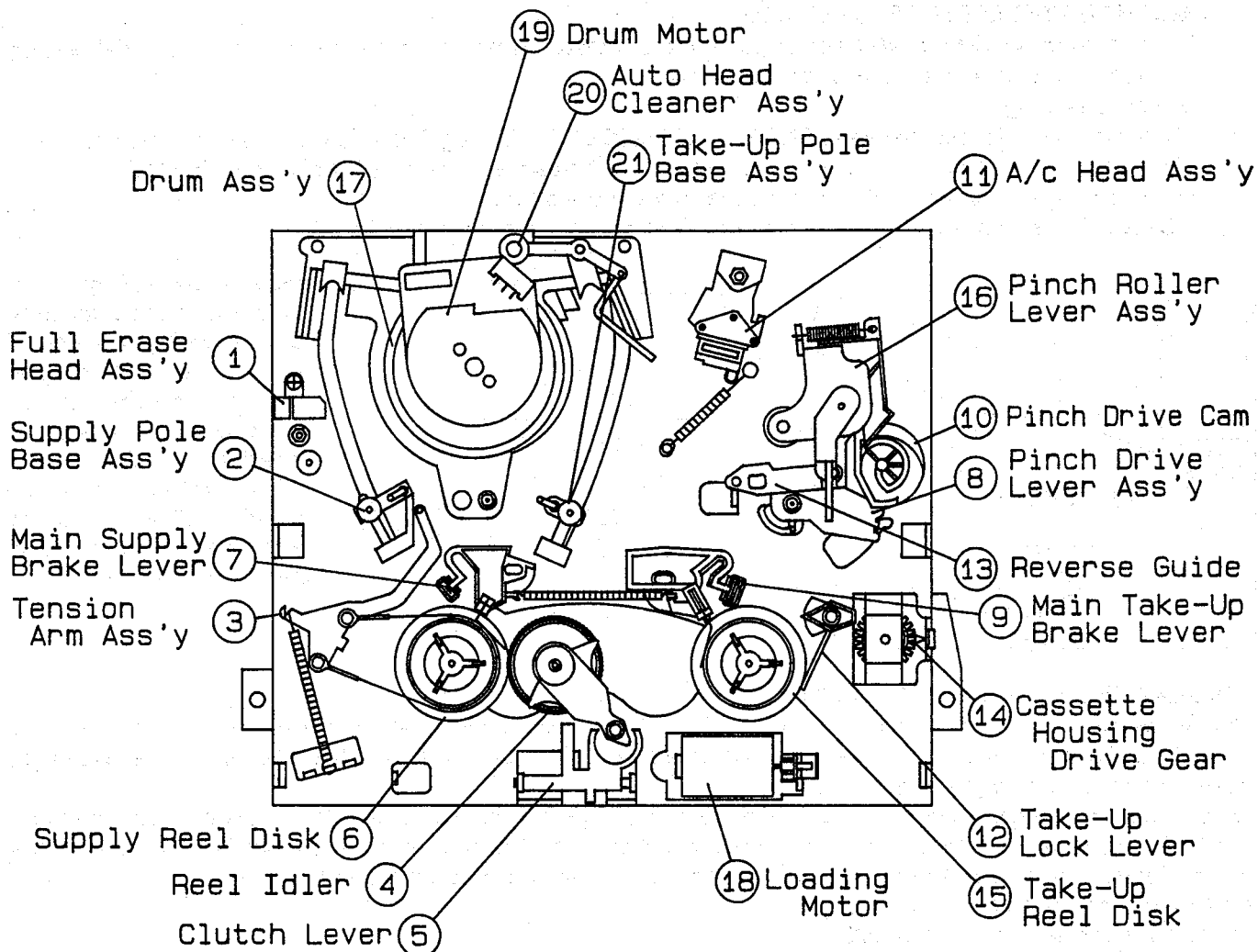
Start and end sensors D710, D709

Record tip switch S701

Take special care of the MC-AC connector (board to board) between the mechanism and main PWB.

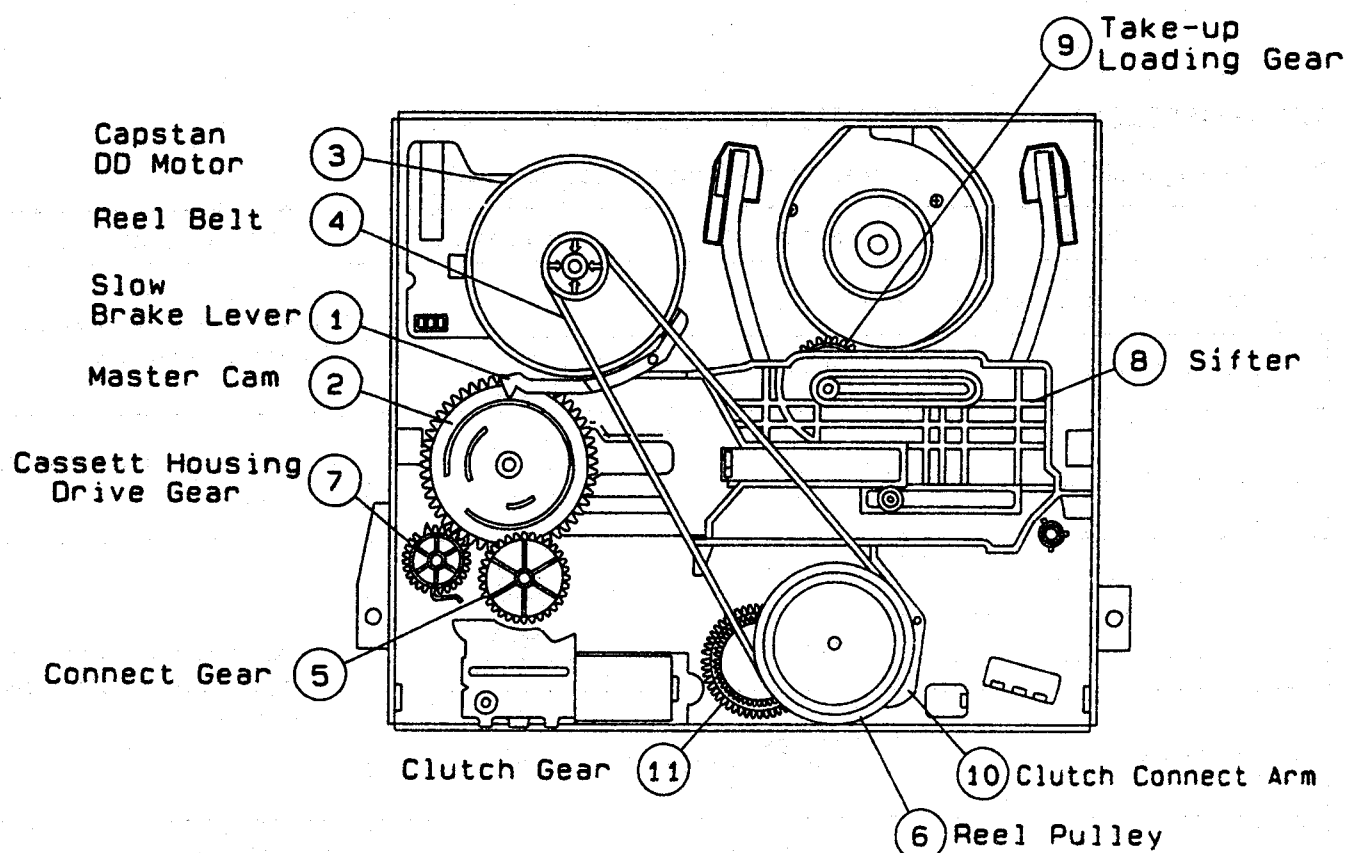


3. FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



No.	Function	No.	Function
1.	Full erase head ass'y Erase the whole records on the tape in the recording mode.	13.	Reverse guide Pulls out the tape and controls the tape drive train height with the upper and lower guides.
3.	Tension arm ass'y Detects the tension of tape while running, and brakes the supply reel disk via the tension band.	16.	Pinch roller lever ass'y Press-fits the tape to the capstan during tape running. The right protrusion switches the clutch of the cassette housing control assembly in "tape eject", and makes the mechanism eject the tape.
7.	Main supply brake lever Brakes the supply reel disk to prevent tape slackening when the unit is stopped in fast forward or rewind mode.	18.	Loading motor A motive power which drives the mechanism. It transmits the power to the master cam and cassette housing control assembly.
9.	Main take-up brake lever Brakes the take-up reel disk to prevent tape slackening when the unit is stopped in fast forward or rewind mode.		

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)



No.	Function	No.	Function
1.	Slow brake lever Gets in contact with the capstan D.D. motor linking to the master cam in the slow still mode, and brakes it to a certain degree.	6.	Reel pulley Transmits the power of the capstan D.D. motor to the reel disk via the reel idler.
3.	Capstan D.D. motor A motive power which runs the tape. It transmits the power via the reel belt.	8.	Shifter Transmits the operation of the master cam to break and loading gear.
4.	Reel belt Transmits the power to run the tape to the reel pulley.	9.	Take-up loading gear Shifts the take-up pole base and guide roller via the loading relay gear, and applies the tape around the drum assembly, as well as transmits the power to the supply loading gear.







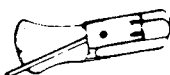
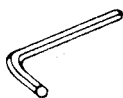
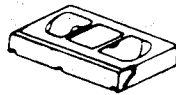
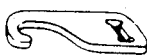
4. ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS

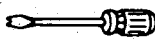

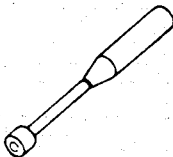

Here we will describe a relatively simple service work in the field, not referring to the more complicated repairs which would require the use of special equipment and tools (drum assembly replacement, for example).

We are sure that the easy-to-handle tools listed below would be more than handy for periodical maintenance to keep the machine in its original working condition.

TOOLS NECESSARY FOR ADJUSTING THE MECHANICAL UNITS

The following tools are required for proper service and satisfactory repair.

No.	Jig Item	Part No.	Code	Configuration	Remarks
1	Reel Disk Height Adjusting Jig	JiGRH0002	BR		These Jigs are used for checking and adjusting the reel disk height.
2	Master Plane Jig	JiGMP0001	BY		
3	A/C Head Tilt Adjusting Jig	JiGACH-A323U	BX		This Jig is used for setting the A/C head tilt.
4	Torque Gauge (90g)	JiGTG0090	CM		These Jigs are used for checking and adjusting the torque of take-up and supply reel disks.
	Torque Gauge (1.2 kg)	JiGTG1200	CN		
5	Gauge Head	JiGTH0006	AW		
6	Cassette Torque Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.
7	Tension Gauge (300g)	JiGSG0300	BF		There are two gauges used for the tension measurements, 300 g and 2.0 kg.
	Tension Gauge (2.0kg)	JiGSG2000	BS		
8	Hex Wrench (0.9mm)	JiGHW0009	AE		These Jigs are used for loosening or tightening special hexagon type screws.
	Hex Wrench (1.2mm)	JiGHW0012	AE		
	Hex Wrench (1.5mm)	JiGHW0015	AE		
9	Alignment Tape (PAL)	VR0CPSV	CB		These tapes are especially used for electrical fine adjustment.
	Alignment Tape (NTSC)	VR0NBZGS	CB		
11	Tension Gauge Adapter	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.

No.	Jig Item	Part No.	Code	Configuration	Remarks
12	Special Bladed Screwdriver	JiGDRIVERH-4	AP		This screwdriver is used for adjusting the guide roller height.
14	Torque Driver	JiGTD1200	CB		This is used to screw down resin-made parts: the specified torque is 5 kg.
15	Box Driver	JiGDRIVER110-7	AS		This Jig is used for height adjustment of the A/C head and X-position.
		JiGDRIVER110-4	AV		This Jig is used for replacement of the SI roller.
17	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.

MECHANICAL PARTS REQUIRING PERIODICAL INSPECTION

Use the following table as a guide to maintain the mechanical parts in good operating condition.

Parts	Maintained	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y		□	□	□	○	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Supply impedance roller		□	□	□	○		
Supply impedance roller (inner hole and shaft)			□		□		Clean with pure high quality isopropyl alcohol.
Supply impedance roller flange		□	□	□	□		Clean tape contact part with the specified cleaning liquid.
Retaining guide		□	□	□	□		
Slant pole		□	□	□	○		
Drum ass'y		□	○ □	□	○ □	Poor S/N ratio, no colour, poor flatness of the envelope with alignment tape	Clean tape contact area with the specified cleaning liquid.
Full-erase head		□	□	□	○	Poor colour, beating	
A/C head		□	□	□	○	Sound too small or distorted	
Capstan D.D. Motor		□	□	□	○	No tape running, uneven colour	
Pinch roller		□	□	□	○	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Reel belt			□		○	No tape running, tape slack, no fast forward/rewind motion	
Tension band ass'y					○	Cassette not loaded or unloaded	
Loading Motor					○		
Reel idler ass'y					○	No tape running	
Reel pully ass'y			□ △		□ ○		
Clutch gear ass'y					○		
Main supply/take-up brake levers					○	Tape slack	
AHC (Automatic Head Cleaner)			○		○		Replace the roller of the cleaner when it wears down. Just change the AHC roller assembly for new one.

NOTE: ○: Part replacement.
□: Cleaning (For cleaning, use a lint-free cloth dampened with pure isopropyl alcohol).
△: Oil refilling (The indicated point should be lubricated with high quality spindle oil every 1000 hrs).

If the reading is out of the specified value, clean or replace the part.

REMOVAL AND REASSEMBLY OF CASSETTE HOUSING CONTROL ASSEMBLY

● Removal

1. Set the cassette ejected condition in the cassette eject mode.
2. Unplug the recorder from the main source.
3. Follow the procedures below in the specified order.
 - a) Remove the cassette housing installation screws ① and ②.
 - b) Slide and pull out the cassette housing control assembly upward.

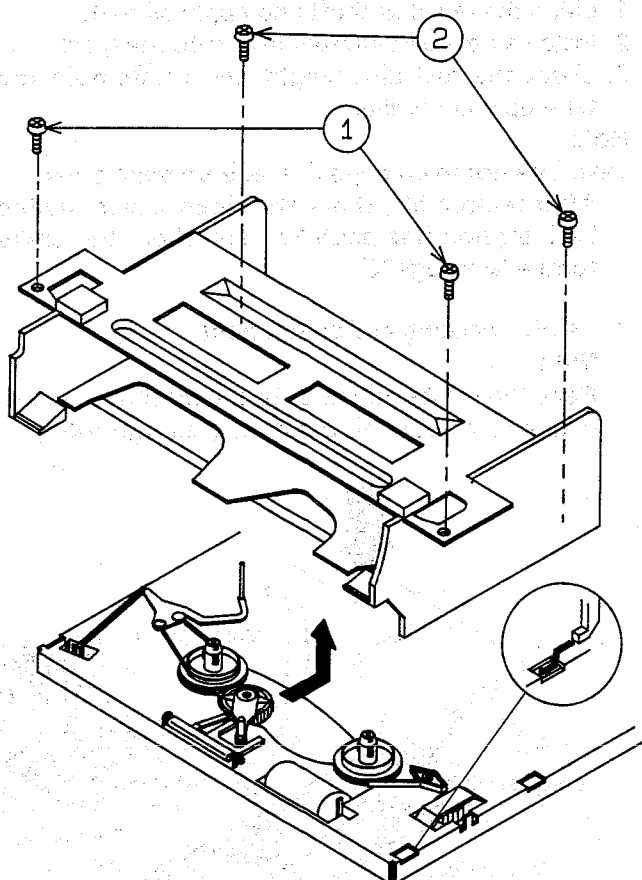


Figure 4-1.

● Reassembly

1. Before installation of the cassette housing control assembly, make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Plug in the power cord. The cassette control drive gear starts and stops just when a tally mark appears in the mechanism chassis window. Unplug the power cord, and remove the short-circuit from between TP5001 and TP5002. Align this tally mark with the cassette control drive angle's mark, as shown in Fig. 4-2, to position the cassette control on the mechanism chassis.

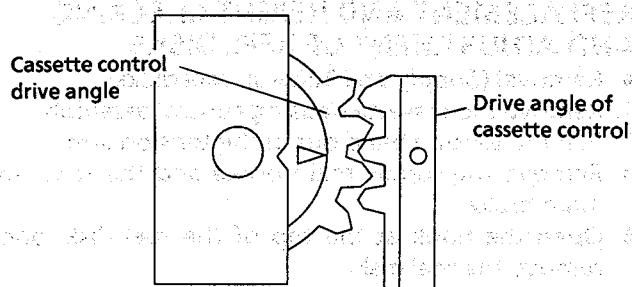


Figure 4-2.

2. Follow the procedures for removal in the reverse order.

Notes:

- ① In using a magnet screw driver, be sure to keep it away from the A/C head, FE (Full Erase) head, or the drum.
- ② In removal and reassembly, take care not to hit the cassette housing control assembly or tools against the guide pin, drum, or the like thereabout.
- ③ Load the cassette once onto the cassette housing control assembly after reassembly.

TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Be sure to make a short-circuit between TP5001 and TP5002, both located on the timer PWB, before turning on the power.
2. Plug in the power cord.
3. Turn on the power switch.
4. Open the lid of a cassette tape by hand.
5. Hold the lid with two pieces of vinyl tape.
6. Set the cassette tape in the mechanism chassis.
7. Stabilize the cassette tape with a weight (500g) to prevent floating.
8. Perform running test.

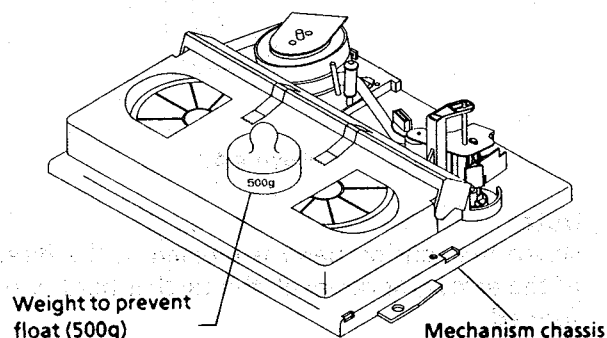


Figure 4-3.

Note:

The weight should not be more than 500g.

REPLACEMENT AND HEIGHT CHECKING AND ADJUSTMENT OF REEL DISKS

● Removal (Supply and Take-up reel disks)

1. Remove the cassette housing control assembly.
2. Pull the tension band out of the tension arm.
3. Remove the supply main brake and the take-up main brake.
4. Open the hook at the top of the reel disk, and remove the reel disk.

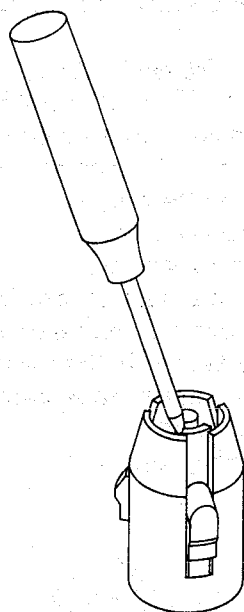
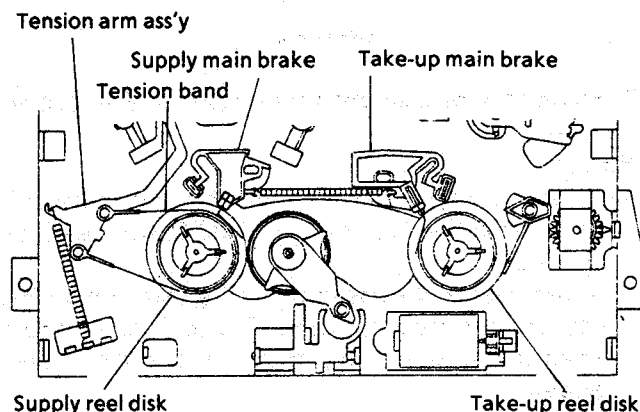


Figure 4-4.

Note:

When the tension band is pressed in the direction of the arrow for removal, the catch is hard to be deformed.



Figure 4-5.

● Reassembly (Supply reel disk)

1. Clean the reel disk shaft and apply oil to it.
2. Install a new supply reel disk onto the shaft.
3. Replace the tension band around the supply reel disk, and insert it to the hole of the tension arm.
4. Check the reel disk height and reassemble the supply main brake.

Notes:

- ① Take enough care not to deform the tension band during installation of the supply reel disk.
- ② Be careful not to damage the supply main brake.

● Reassembly (Take-up reel disk)

1. Clean the reel disk shaft and apply oil to it.
2. Install a new take-up reel disk onto the shaft.
3. Check the reel disk height and reassemble the take-up main brake.

Note:

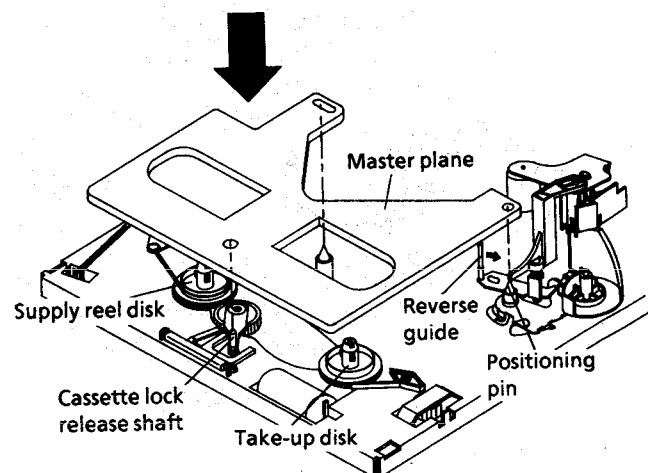
Take care not to damage the take-up main brake.

- * After reassembly, check the video search rewind back tension (see page 17), and check the brake torque (see page 20).

● Height checking and adjustment

Note:

Place the master plane onto the mechanism unit, taking care not to hit the drum (see Figure 4-6).



Set the master plane releasing the reverse guide by a finger.

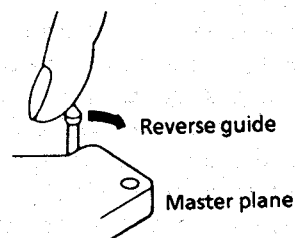


Figure 4-6.

- Check that the reel disk is lower than part A but higher than part B. If the height is not correct, readjust the reel disk height by changing the poly-slider washer under the reel disk.

Note:

Whenever replacing the reel disk, perform the height checking and adjustment.

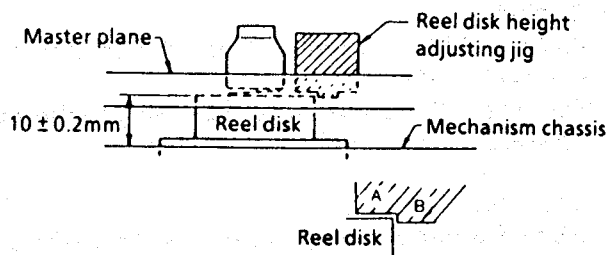


Figure 4-7.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Setting
 1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
 2. Press the FF button to set the mechanism to the fast forward mode.
- Checking
 1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the take-up direction.
 2. Check to see if the take-up torque is higher than 69 mN·m (700 gf·cm).

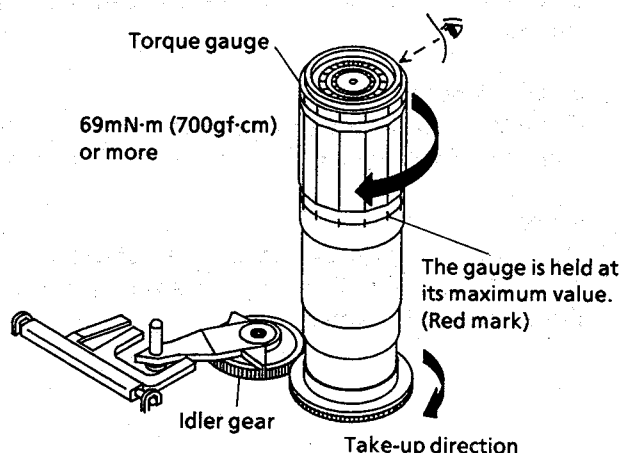


Figure 4-8.

Adjustment

1. If the take-up torque is outside the range, clean the capstan D.D. motor pulley, reel belt and reel pulley with cleaning liquid, then recheck the torque.
2. If the take-up torque is still out of range, replace the reel belt.

Notes:

1. Hold down the torque gauge so that it may not fly off.
2. When checking the take-up torque, do not keep the reel disk locked for a longer time.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Setting
 1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
 2. Press the REW button to set the mechanism to the rewind mode.
- Checking
 1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the take-up direction.
 2. Check to see if the take-up torque is higher than 69 mN·m (700 gf·cm).

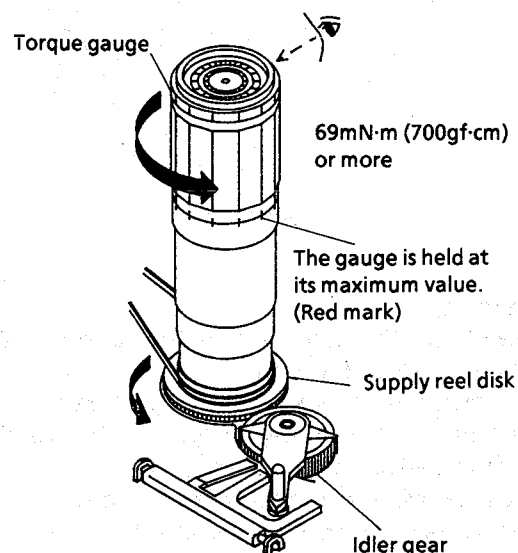


Figure 4-9.

● Adjustment

1. If the take-up torque is outside the range, clean the capstan D.D. motor pulley, reel belt and reel pulley with cleaning liquid, then recheck the torque.
2. If the take-up torque is still out of range, replace the reel belt.

Notes:

1. Hold down the torque gauge so that it may not fly off.
2. When checking the take-up torque, do not keep the reel disk locked for a longer time.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN PLAYBACK MODE

1. Remove the cassette housing control assembly.
2. Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
3. Open the lid of the cassette torque meter, and hold it with two pieces of vinyl tapes.
4. Load the cassette torque meter into the unit.
5. Put the weight (500g) on the cassette torque meter.
6. Press the REC button to put the unit in REC mode.

Set value SP $8.8 \pm 3.8 \text{ mN}\cdot\text{m}$ ($90 \pm 39 \text{ gf}\cdot\text{cm}$)

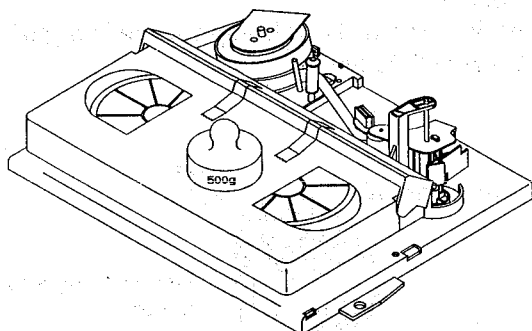


Figure 4-10.

● Checking

1. Check that the torque is in the range of $8.8 \pm 3.8 \text{ mN}\cdot\text{m}$ ($90 \pm 39 \text{ gf}\cdot\text{cm}$).
2. The torque fluctuates due to the rotational deviation of the reel pulley ass'y. Use the center of the fluctuation as the value.
3. Place the ass'y in the SP record mode, and check that the take-up torque is within the range.

● Adjustment

If the take-up torque in the playback mode is outside the range, replace the reel pulley ass'y.

Note:

Stabilize the cassette torque meter to prevent floating.

CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

● Remove the cassette housing control assembly.

- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.

● Setting

1. Push the PLAY button to place the ass'y in the playback mode.
2. Push the REW button to place the ass'y in the video search rewind mode.

● Checking

1. Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 1 to 2 seconds) and check that the torque is within the set value $14.5 \pm \begin{smallmatrix} 8 \\ 6 \end{smallmatrix} \text{ mN}\cdot\text{m}$ ($148 \pm \begin{smallmatrix} 80 \\ 60 \end{smallmatrix} \text{ gf}\cdot\text{cm}$)

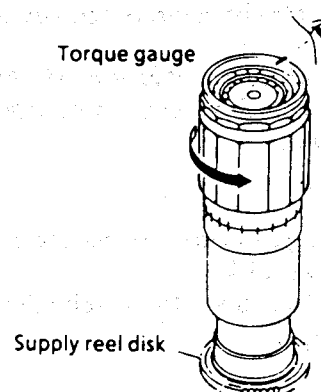


Figure 4-11.

Note:

Set the torque gauge securely on the supply reel disk. If it is not secure, the measurement will be incorrect.

● Adjustment

If the take-up torque in video search rewind mode is outside the range, replace the reel pulley ass'y.

Note:

The torque fluctuates due to the rotational deviation of the reel pulley ass'y. Use the center of the fluctuation at the value.

CHECKING THE FAST FORWARD BACK TENSION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Checking
 1. Push the FF button to place the ass'y in the fast forward mode.
 2. Place the torque gauge on the supply reel disk, and turn it clockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is $1.5 \pm 0.9 \text{ mN}\cdot\text{m}$ ($15 \pm 9 \text{ gf}\cdot\text{cm}$).

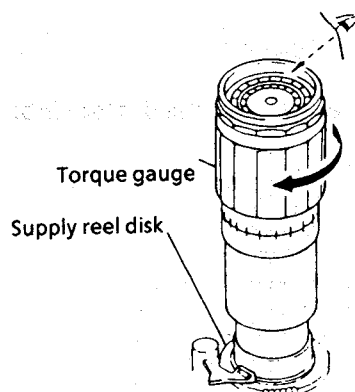


Figure 4-12.

Note:

- ① Set the torque gauge securely on the supply reel disk. If the torque gauge is not securely set on the reel disk, measurement will be incorrect.
- ② Measure the torque with the torque gauge's weight exerted on the reel disk.

CHECKING THE REWIND BACK TENSION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Checking
 1. Push the REW button to place the ass'y in the rewind mode.
 2. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is $1.3 \pm 0.8 \text{ mN}\cdot\text{m}$ ($13 \pm 8 \text{ gf}\cdot\text{cm}$).

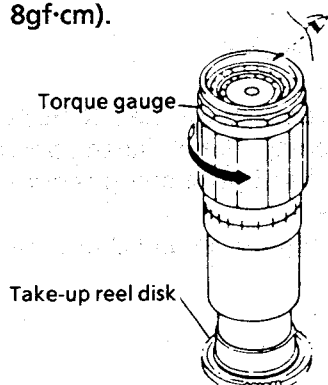


Figure 4-13.

Note:

- ① Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.
- ② Measure the torque with the torque gauge's weight exerted on the reel disk.

CHECKING THE VIDEO SEARCH REWIND BACK TENSION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Checking
 1. Push the PLAY button to place the ass'y in the playback mode.
 2. Push the rewind button to place the ass'y in the video search rewind mode.
 3. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value $4 \pm 1.7 \text{ mN}\cdot\text{m}$ ($41 \pm 17 \text{ gf}\cdot\text{cm}$).

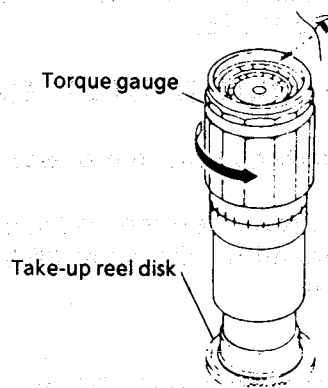


Figure 4-14.

Note:

- ① Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.
- ② Measure the torque with the torque gauge's weight not exerted on the reel disk.

CHECKING THE PINCH ROLLER PRESSURE

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Checking
 1. Push the PLAY button to place the ass'y in the playback mode.

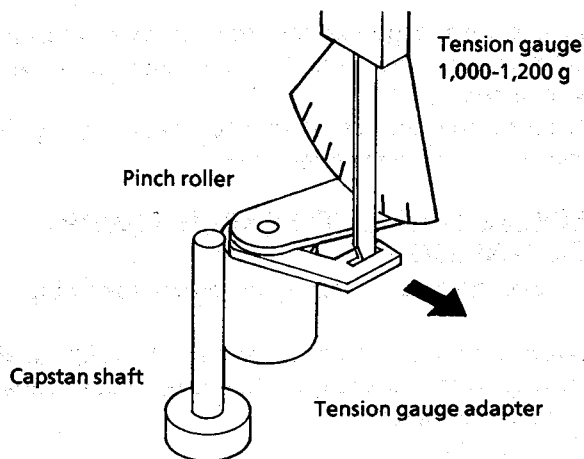


Figure 4-15.

1. Detach the pinch roller from the capstan shaft.
2. Set the tension gauge by hooking the tension gauge adapter onto the pinch roller shaft.
3. Gradually release the pressure to allow the pinch roller to touch the capstan shaft. When the pinch roller just touches the capstan shaft, read the indication on the gauge.
4. Check that the reading of the tension gauge is in the range of 900 to 1200 g.

CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Setting
 1. Open the lid of cassette tape (E-180), and hold it with two pieces of vinyl tapes.
 2. Load the cassette tape into the unit.
 3. Put the weight (500g) on the cassette tape.

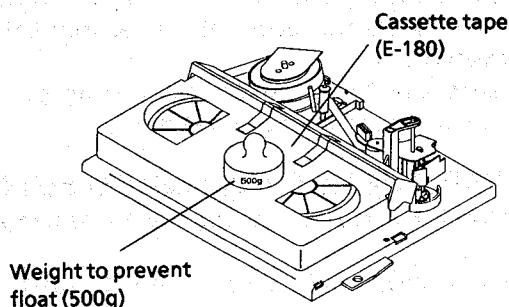


Figure 4-16.

- Checking
 1. Set a cassette tape, press the REC button and get the tape loaded. Now check the tension pole position.

2. Visually check to see if the left end of the tension pole is in alignment with the line 0.2 mm left of the center line of the SI roller. Readjust as required in the following steps.

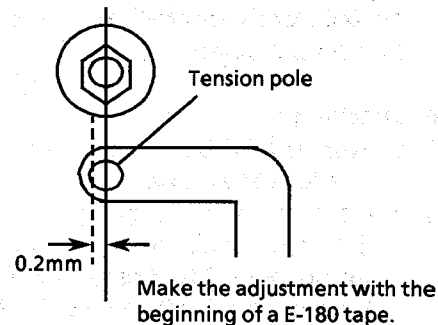


Figure 4-17.

- ① If the end is at the left from the dotted line:

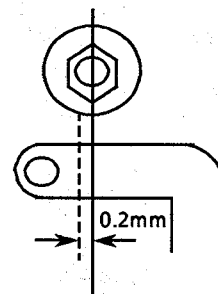


Figure 4-18.

1. Remove the cassette and press the REC button to make an empty loading. Put a bladed screwdriver into the tension band positioning cam and turn it clockwise.
2. Place the cassette in position and check the tension pole position.

- ② If the end is at the right from the dotted line:

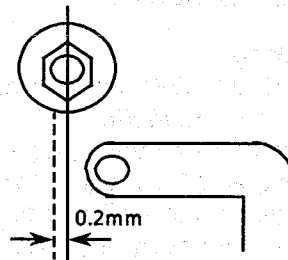


Figure 4-19.

1. Remove the cassette and press the REC button to make an empty loading. Put a bladed screwdriver into the tension band positioning cam to turn it counterclockwise.
2. Place the cassette in position and check the tension pole position.

Note:

- ① The tension band positioning cam cannot be adjusted with a cassette in place because the cam will be located below the cassette. Repeat a series of steps; empty loading, adjustment, cassette placement and position checking.
- ② Turn the positioning cam clockwise to move the tension pole to the right (in the black-arrow direction). Turn it counterclockwise to move the tension pole to the left (in the white-arrow direction).

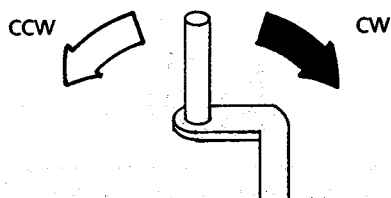


Figure 4-20.

- ③ Adjustable range of the tension pole positioning cam.

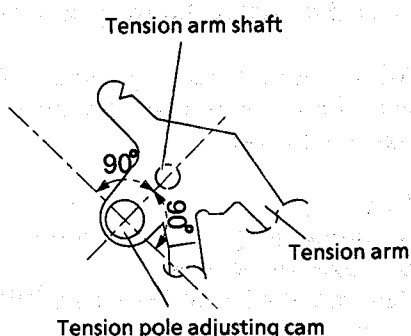


Figure 4-21.

Adjust the tension pole positioning cam so that the arrow mark on the cam be within 90° left and right from the tension arm shaft's center.

CHECKING AND ADJUSTMENT OF RECORD / PLAYBACK BACK TENSION

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Setting
 1. Open the lid of the cassette torque meter, and hold it with two pieces of vinyl tapes.
 2. Load the cassette torque meter into the unit.
 3. Put the weight (500g) on the cassette torque meter.

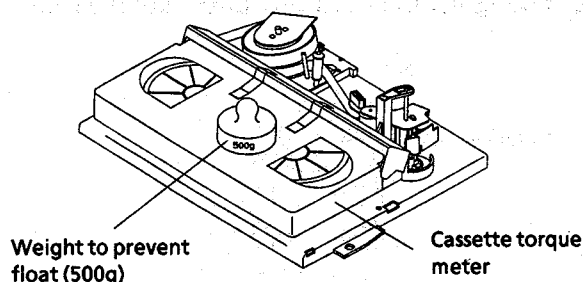


Figure 4-22.

- **Checking**

1. Push the REC button to place the unit in the record mode.
2. Check that the back tension indicated by the gauge is within the set range 31 to 38 g·cm.

- **Notes:**

1. Make sure that the video cassette tape is over the retaining guide.
2. Make sure that the tape is not slack nor damaged at either end.

- **Adjustment**

1. If the reading of the cassette torque meter is less than specified, move the tension spring hook toward A.
2. If the reading of the cassette torque meter is more than specified, move the tension spring hook toward B.

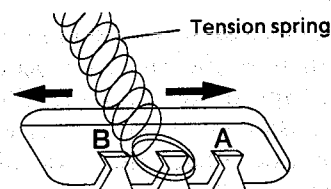


Figure 4-23.

CHECKING THE BRAKE TORQUE

● Checking the brake torque at the supply side

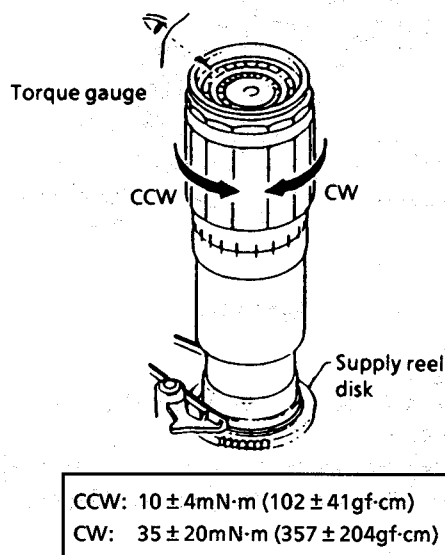


Figure 4-24.

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Setting
 1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
 2. Switch from the FF mode to the STOP mode.
 3. Disconnect the AC power plug.
- Checking
 1. Slowly rotate the torque gauge in the clockwise (CW) direction and counterclockwise (CCW) direction of the supply brake so that the reel disk and the indicator of the torque gauge rotate at an equal rate. Check that the values are within the range of CW direction = $35 \pm 20\text{mN}\cdot\text{m}$ ($357 \pm 204\text{gf}\cdot\text{cm}$), CCW direction = $10 \pm 4\text{mN}\cdot\text{m}$ ($102 \pm 41\text{gf}\cdot\text{cm}$), and that the brake torque in the CW direction is at least twice as high as that in the CCW direction.

● Checking the brake torque at the take-up side

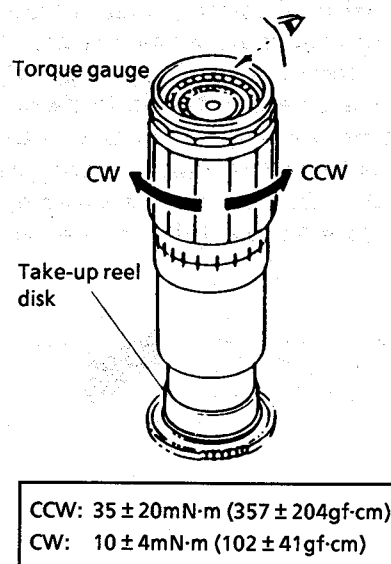


Figure 4-25.

- Remove the cassette housing control assembly.
- Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
- Setting
 1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
 2. Switch from the FF mode to the STOP mode.
 3. Disconnect the AC power plug.
- Checking
 1. Slowly rotate the torque gauge in the clockwise (CW) direction and counterclockwise (CCW) direction of the take-up brake so that the reel disk and the indicator of the torque gauge rotate at an equal rate. Check that the values are within the range of CCW direction = $35 \pm 20\text{mN}\cdot\text{m}$ ($357 \pm 204\text{gf}\cdot\text{cm}$), CW direction = $10 \pm 4\text{mN}\cdot\text{m}$ ($102 \pm 41\text{gf}\cdot\text{cm}$), and that the brake torque in the CCW direction is at least twice as high as that in the CW direction.
- Adjustment of the brake torque at the supply side and the take-up side
 1. If the supply or take-up brake torque is outside the range, clean the supply or take-up reel disk break lever pad, then recheck the torque.
 2. If the supply or take-up brake torque is still outside the range, replace the main brake ass'y or the main brake spring.

Note:

When the main brake is replaced, perform the height checking and adjustment of reel disks (see page 14), and the brake torque checking.

REPLACEMENT OF A/C (Audio/Control) HEAD

1. Remove the cassette housing control assembly.
2. Place the unit in the unloading mode, and unplug the power cord.

● Removal

1. Loosen the tilt adjusting screw ①.
2. Remove the azimuth adjusting screw ②.
3. Remove the A/C head screw ③.
4. Unsolder the A/C head PWB soldered to the A/C head assembly.

Notes:

1. After replacement, be sure to perform the adjustment of the tape drive train (see page 23). Under any circumstances, avoid touching the head. Clean the head, if touched with your finger, with alcohol.
2. Take care that the azimuth spring does not fly off when removing the A/C head screw.

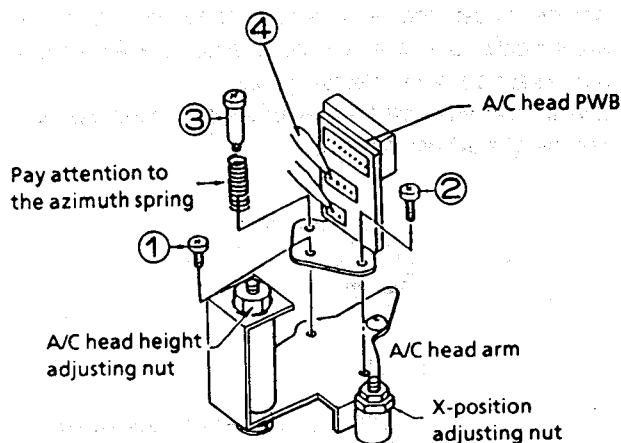


Figure 4-26.

● Replacement

1. Solder the removed A/C head PWB onto a new A/C head assembly.
2. The A/C head assembly is attached so that the A/C head arm and A/C head plate are roughly parallel to each other.

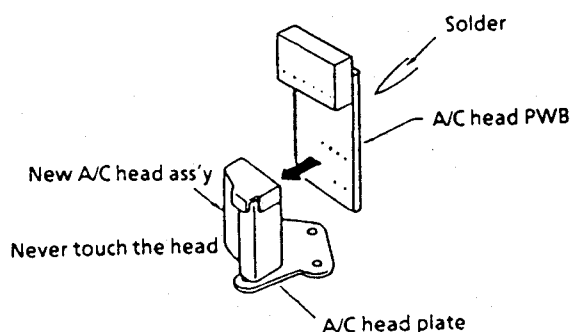


Figure 4-27.

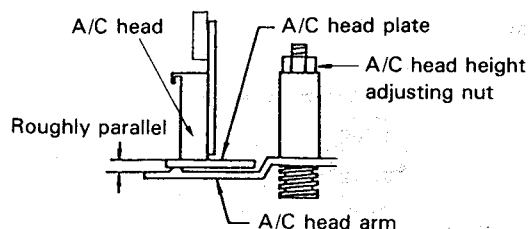
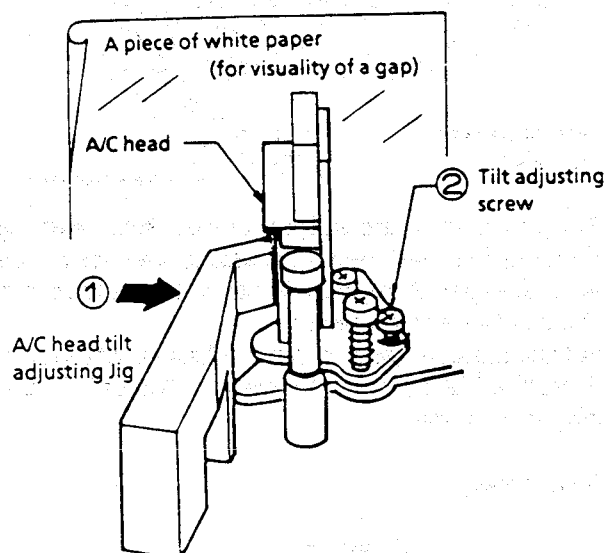


Figure 4-28.

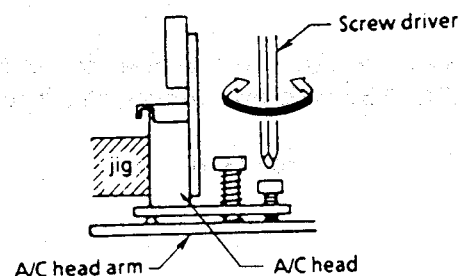
● Adjustment

[A/C head tilt angle]

1. Set the mechanism to the loading mode.
2. Place the A/C head tilt adjusting Jig ①.
3. Slowly turn the tilt adjusting screw ② with a screw driver until there is no gap between the Jig and the A/C head.



(a)

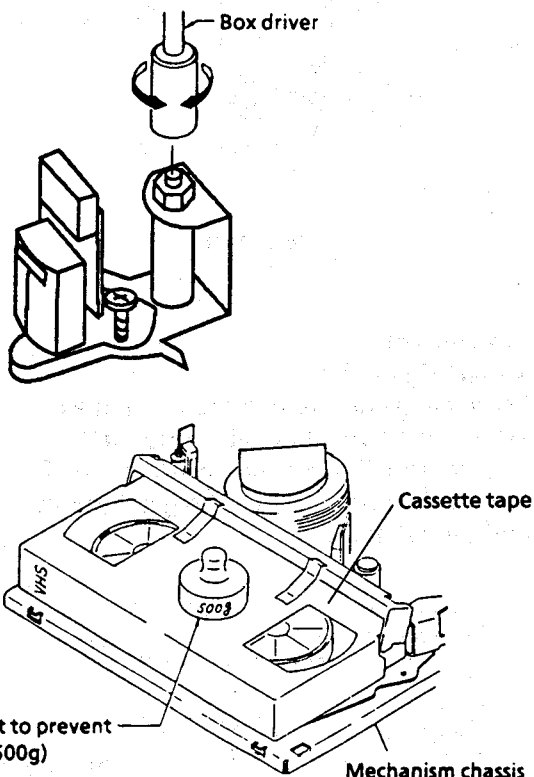


(b)

Figure 4-29.

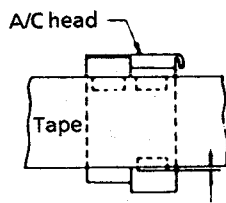
[A/C head height rough adjustment]

● Setting



- ① Roughly adjust the height of the A/C head by turning the A/C head adjusting hexagon nut with the specialized box driver until the tape is in the position shown below.
- ② Set the cassette tape to the mechanism chassis.
- ③ Press the PLAY button to put the unit in the playback mode.

● Adjustment



Adjust the nut visually so that the control head is visible 0.3 to 0.5mm below the bottom of the tape.

Figure 4-30.

HEIGHT ADJUSTMENT OF REVERSE GUIDE

[Height adjustment of reverse guide]

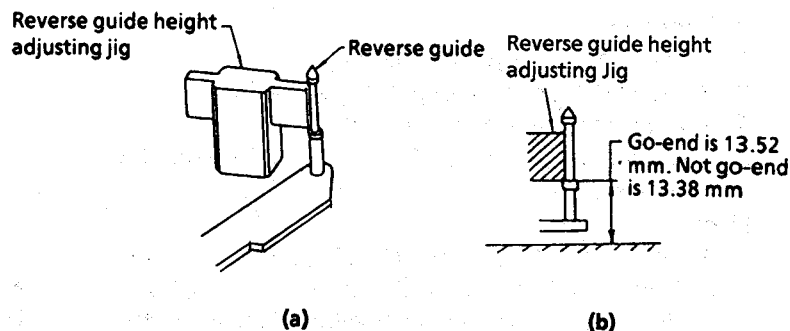


Figure 4-31.

1. In the tape load mode, make adjustment at the 13.38mm side first and then rotate the height adjusting nut by 1/6 turn counterclockwise.
2. Actually load the unit with a tape, put it in the play mode, and make sure the tape is free from wrinkles near the reverse guide.
3. Use a commercially available box driver to turn the height adjusting nut.

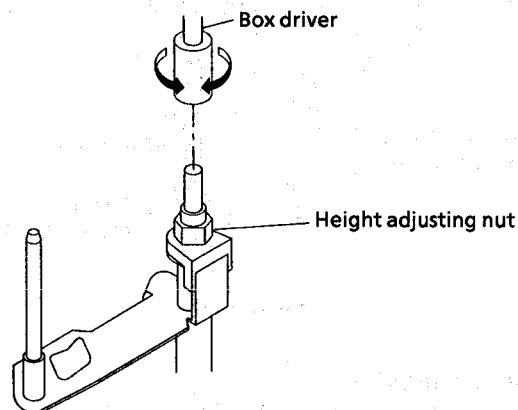


Figure 4-32.

ADJUSTMENT OF TAPE DRIVE TRAIN

1. Remove the cassette housing control assembly.
2. Make a short-circuit between TP5001 and TP5002, both located on the timer PWB. Now turn on the power.
3. Check and adjust the position of the tension pole. (See page 18.)
4. Check and adjust the video search rewind back tension. (See page 17.)
5. Set the tilt angle of the A/C head. (See page 21.)
6. Rough adjustment of tape drive train.
 - a) Connect the oscilloscope to the test point for PB CHROMA envelope output (TP2201). Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP2202).
 - b) Loosen the setscrew at the lower part of the guide roller, and adjust it with an adjusting screw driver (JIGDRIVERH-4) so that the guide roller turns smoothly. (Do not overloosen the setscrew, which causes insecurity of the guide roller.) (See Figure 4-33.)
 - c) Set the alignment tape (monoscope pattern) on the reel disk, and place the unit in the playback mode.
(Place a 500 g weight on the cassette tape to prevent floating of the cassette tape.)

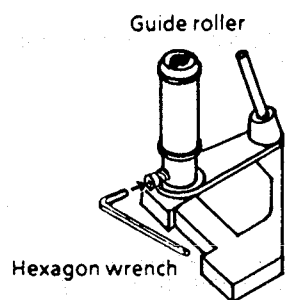


Figure 4-33.

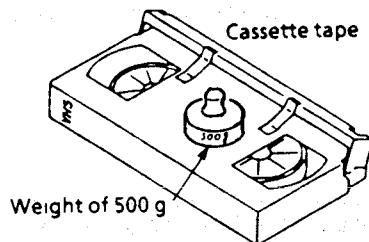


Figure 4-34.

- d) In the X value adjustment mode (see the Electrical Adjustment), change the envelope waveform from MAX to MIN, and MIN to MAX by pushing the (+) or (-) tracking button, and check a flat response is obtained on the waveform.
- e) If a flat response cannot be obtained, roughly adjust the guide rollers on the supply side and take-up side using an adjusting screw driver until a flat response can be obtained.
- f) Turn the A/C head tilt adjusting screw with a screwdriver to prevent the tape from wrinkling at the upper and lower flanges of the fixed guide.
 - 1) Wrinkles at the upper flange : Turn the above adjusting screw clockwise, as shown in Figure 4-35 (a).
 - 2) Wrinkles at the lower flange : Turn the above adjusting screw counterclockwise, as shown in Figure 4-35 (b).

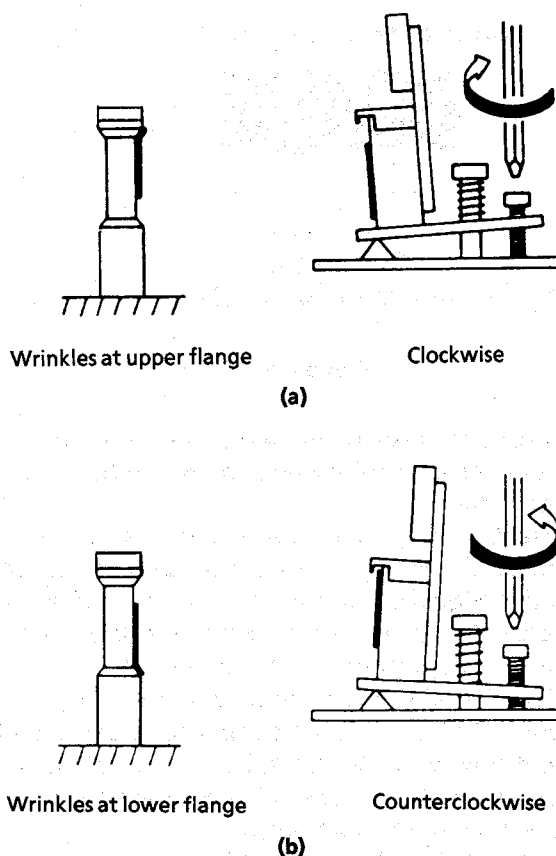


Figure 4-35.

Notes:

1. Place the tracking control in the center position, and adjust the X-position adjusting nut so that the PB CHROMA envelop becomes maximum for easier rough adjustment of the tape drive train.
2. In the rough adjustment, pay particular attention to the outlet side.

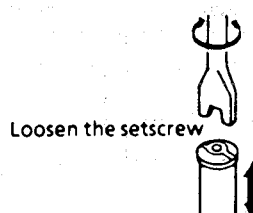


Figure 4-36.

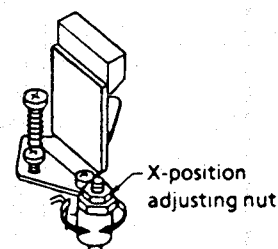


Figure 4-37.

PB CHROMA envelope (TP2201)

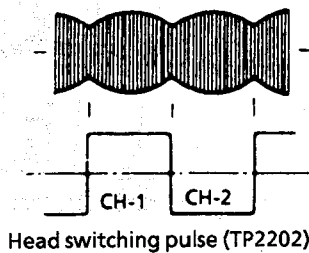


Figure 4-38.

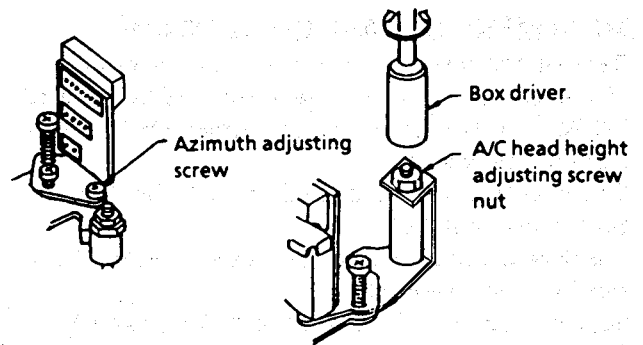


Figure 4-39.

Figure 4-40.

7. Adjustment of A/C head height and azimuth

- Connect an oscilloscope to the audio output terminal.
- Use the alignment tape and play back its audio 6 kHz signal (monoscope pattern for video signal). Adjust the azimuth adjusting screw to obtain the maximum audio output on an oscilloscope. (See Figure 4-39.)
- Use the alignment tape and play back its audio 1 kHz signal (colour bar for video signal) and slowly rotate the A/C head height adjusting nut with the special box driver to obtain the maximum audio output.
- Perform the adjustment in b) again.
- After this adjustment, apply glyptal to the screws and nuts to fix them.

8. Adjustment of tape drive train and X-Position.

- Connect the oscilloscope to the test points (TP2201) for PB CHROMA envelope output. Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP2202).
- Play back the tape drive train alignment tape.
- Push the (+) or (-) button to change the envelope waveform from MAX to MIN, and MIN to MAX. Adjust the guide roller's height on the supply and take-up sides with an adjusting screw driver, to obtain an envelop waveform that is as flat as possible.
- If the tape is above or below the helical lead, the PB CHROMA waveform will take the shape shown in Figure 4-41.
- Adjust for maximum flatness of the envelope as the step 6, e) in page 23.

	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Take-up side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Supply side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The supply side guide roller is then rotated in the clockwise direction to flatten the envelope.	Take-up side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The take-up side guide roller is then rotated in the clockwise direction to flatten the envelope.

Figure 4-41.

- f) Push the (+) or (-) tracking button to check that a flat response is obtained on the envelope waveform.
 - g) Secure the guide roller by tightening the guide roller setscrew in the unloading mode.
 - h) Play back the tape drive train alignment tape to check that the envelope waveform does not change.
9. Adjustment of A/C head X-position.
- a) In the X value adjustment mode (see the Electrical Adjustment), make a short-circuit between the test jumpers 3 and 4 on the timer PWB in order to center the tracking.
 - b) Rotate the X-position adjusting nut with an adjusting box driver, and adjust the A/C head position for maximum head switching pulse low side envelope.
 - c) Adjust the playback switching point.
 - d) Check the flatness of the envelope waveform and sound by playing back a recorded tape.

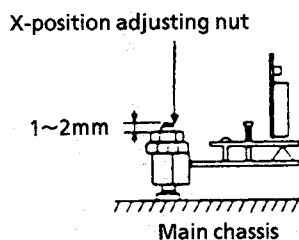


Figure 4-42.

REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- Remove the cassette housing control assembly.
 - Removal (Follow the order of indicated numbers.)
1. Disconnect from the board-to-board connector on the main PWB.
 2. Remove the reel belt ①.
 3. Remove the screws ②.

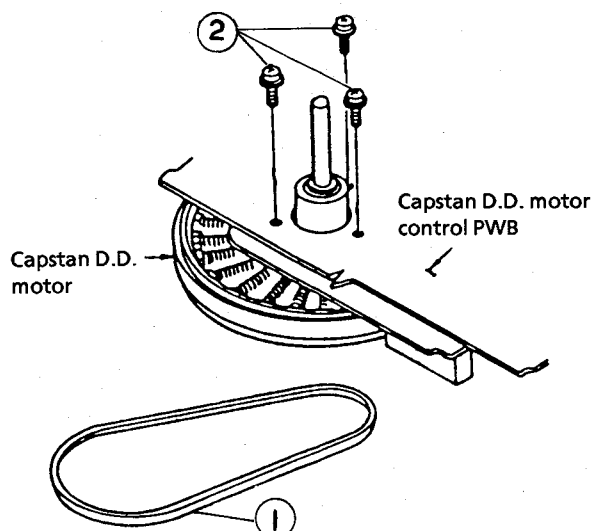


Figure 4-43.

● Reassembly

1. Mount the capstan motor on the mechanism chassis making sure not to allow the capstan shaft to hit the mechanism chassis, and attach it with the three screws.
2. Attach the reel belt. Reconnect to the board-to-board connector on the main PWB.

Notes:

1. After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and check the movement.
2. Check the servo circuit.

REPLACEMENT OF DRUM D.D. MOTOR

1. Put the unit in the cassette eject position.
2. Unplug the power cord.

● Removal (Reverse the order in reassembly.)

1. Disconnect the FFC cable ①.
2. Unscrew the stator assembly fixing screws ②.
3. Take out the stator assembly ③.
4. Unscrew the rotor assembly fixing screws ④.
5. Take out the rotor assembly ⑤.

Notes:

1. In removing the stator assembly, part of the drum earth spring pops out of the pre-load collar. Be careful not to lose it.
2. Secure the rotor assembly so that the installation positioning holes in the rotor assembly and upper drum assembly match. (Match the upper drum's notch with the rotor's hole.)
3. Be careful not to damage the upper drum or the video head.
4. Be sure that the hall device and the stator assembly are not damaged by the rotor assembly or other parts.
5. After installation, adjust the playback switching point.

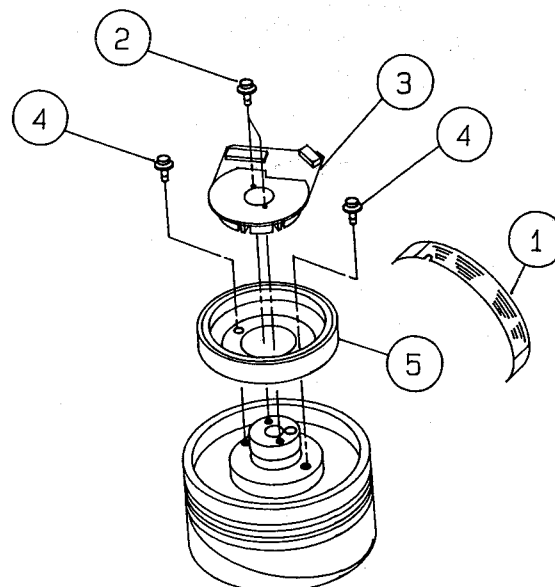


Figure 4-44.

ASSEMBLE THE MECHANISM'S PARTS REQUIRING THE PHASE MATCHING IN THE STEPS BELOW.

1. Assembling the pinch roller assembly and the pinch drive cam (on the front of the mechanism chassis).
2. Mounting the shifter (on the back of the mechanism chassis).
3. Mounting the master cam (on the back of the mechanism chassis).
4. Mounting the connection gear, slow brake and loading motor assemblies (on the back of the mechanism chassis).

1. Assembling the pinch roller assembly and the pinch drive cam (on the front of the mechanism chassis).

Place the following parts in position in numerical order.

- (1) Pinch drive cam ①
- (2) Pinch roller and pinch double-action lever ②
- (3) Open lever ③

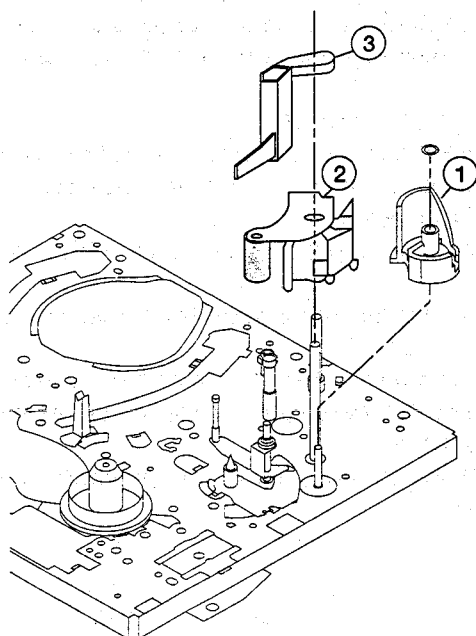


Figure 4-45.

① Insert Pinch Drive Cam.

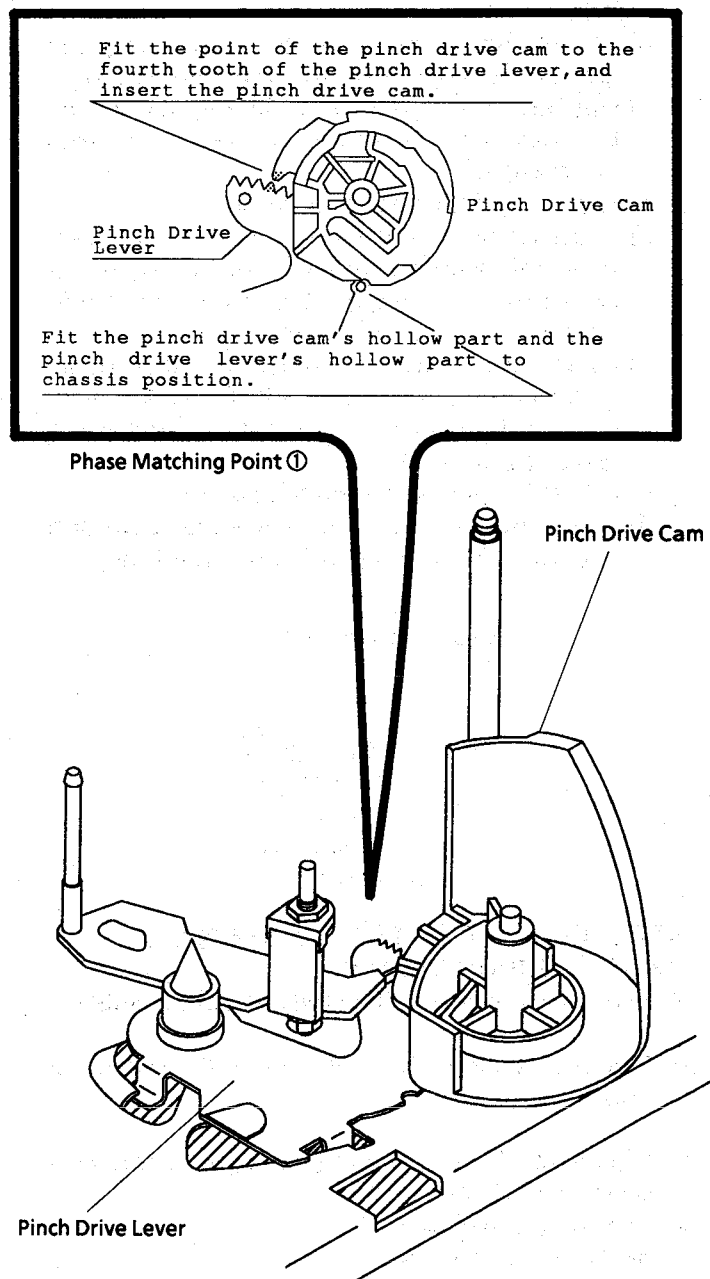
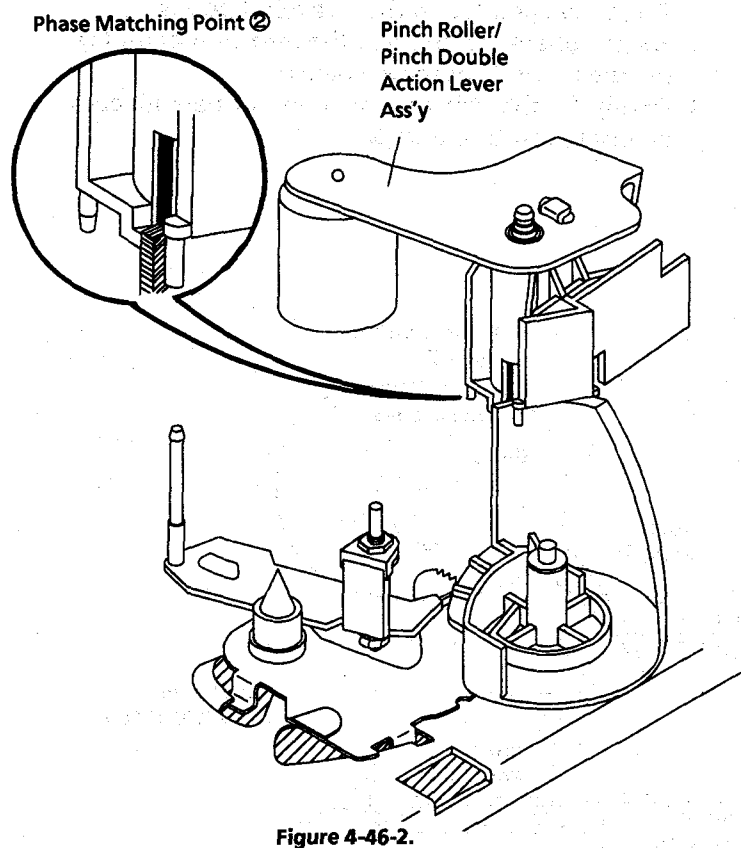
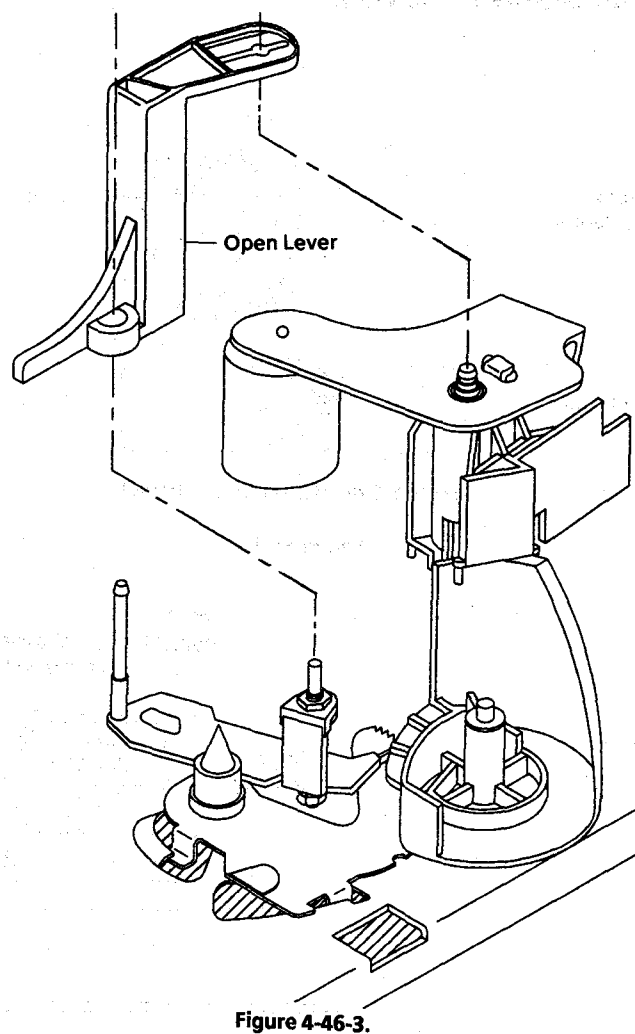


Figure 4-46-1.

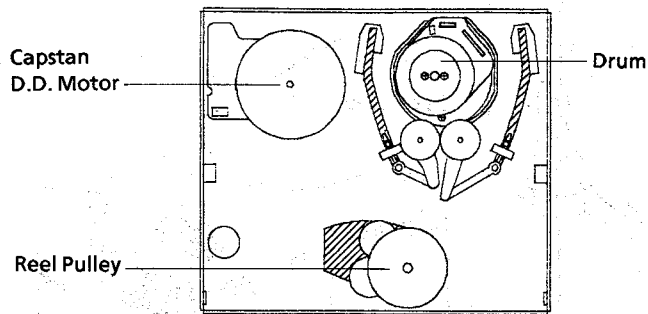
② Insert Pinch Roller/Pinch Double Action Lever Ass'y.



③ Insert Open Lever.



2. Mounting the shifter (on the back of the mechanism chassis).



(Bottom Side of mechanism chassis)

Figure 4-47.

1. Make sure that the loading gear is at the point (1) as shown below.
2. Place the shifter in position, keeping in mind the 7 insertion points and the five relief points.
3. For the phase matching at the insertion point (1), see the point (2) as shown below.
4. Finally fix the shifter with two washers located on insert points ① and ⑥.

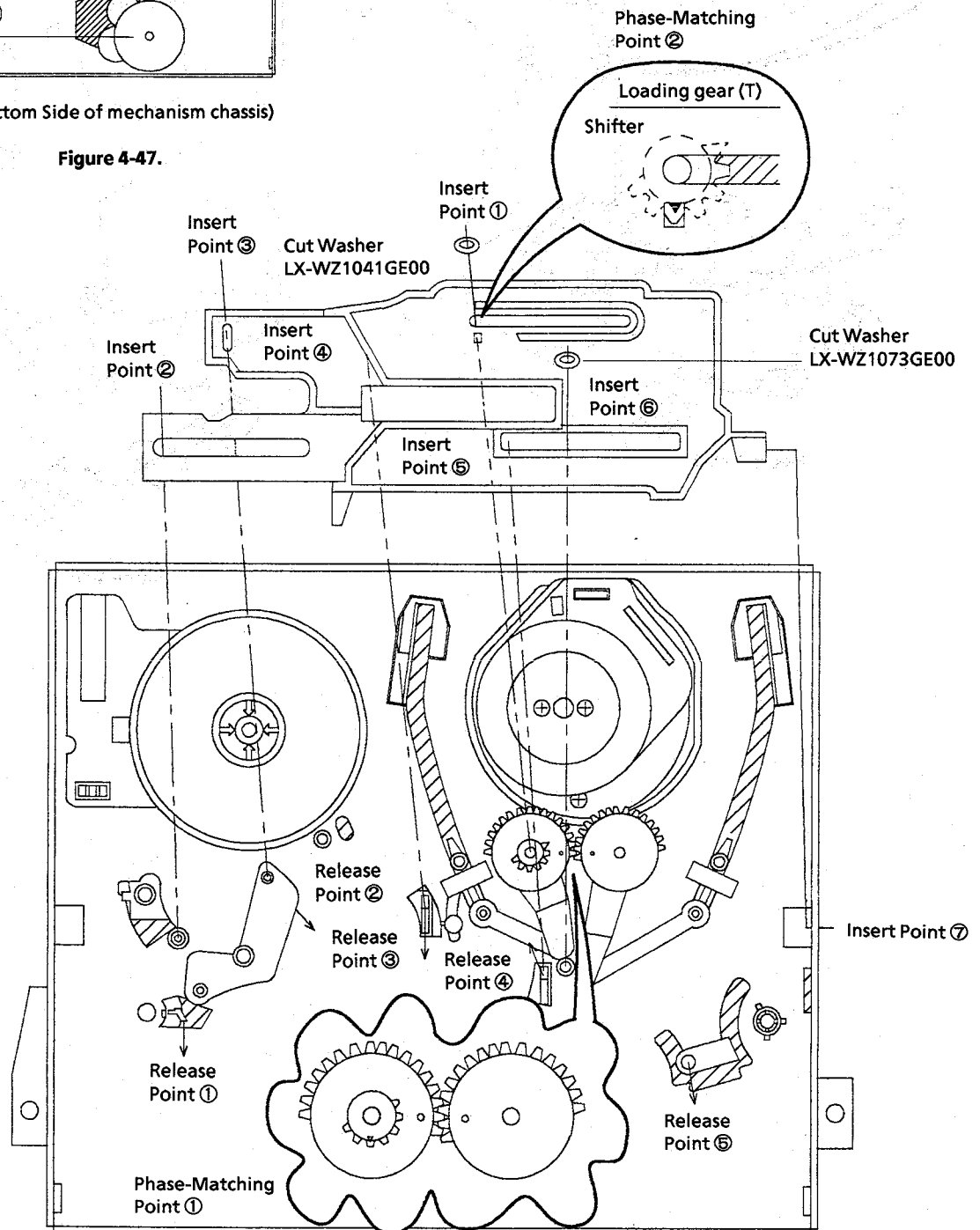


Figure 4-48.

3. Mounting the master cam (on the back of the mechanism chassis).

- (1) Make sure beforehand that the shifter is at the point as shown below.
- (2) Place the master cam in the position as shown below.

Note:

See the figure below for the phase matching between the master cam and the cassette control drive gear.

- (3) Finally fix the master cam with E ring.

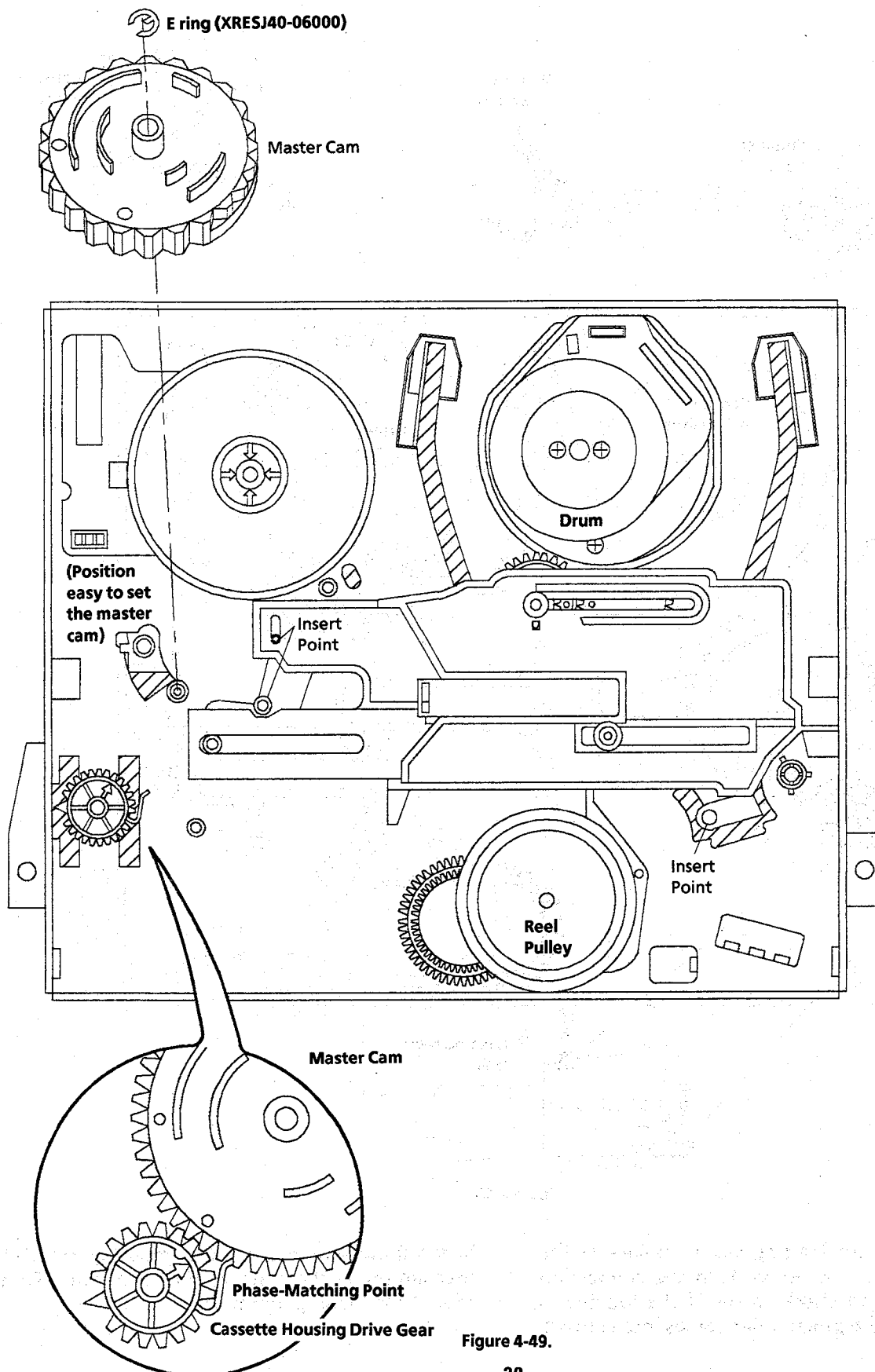


Figure 4-49.

4. Mounting the connection gear, slow brake and loading motor assemblies (on the back of the mechanism chassis).

- (1) Assemble the connect gear.
- (2) Assemble the slow brake.
- (3) Assemble the loading motor unit.

Note:

Let the slow brake leg out of the front of the mechanism chassis. Catch the spring to the take-up fixing guide that is at the left of the A/C head.

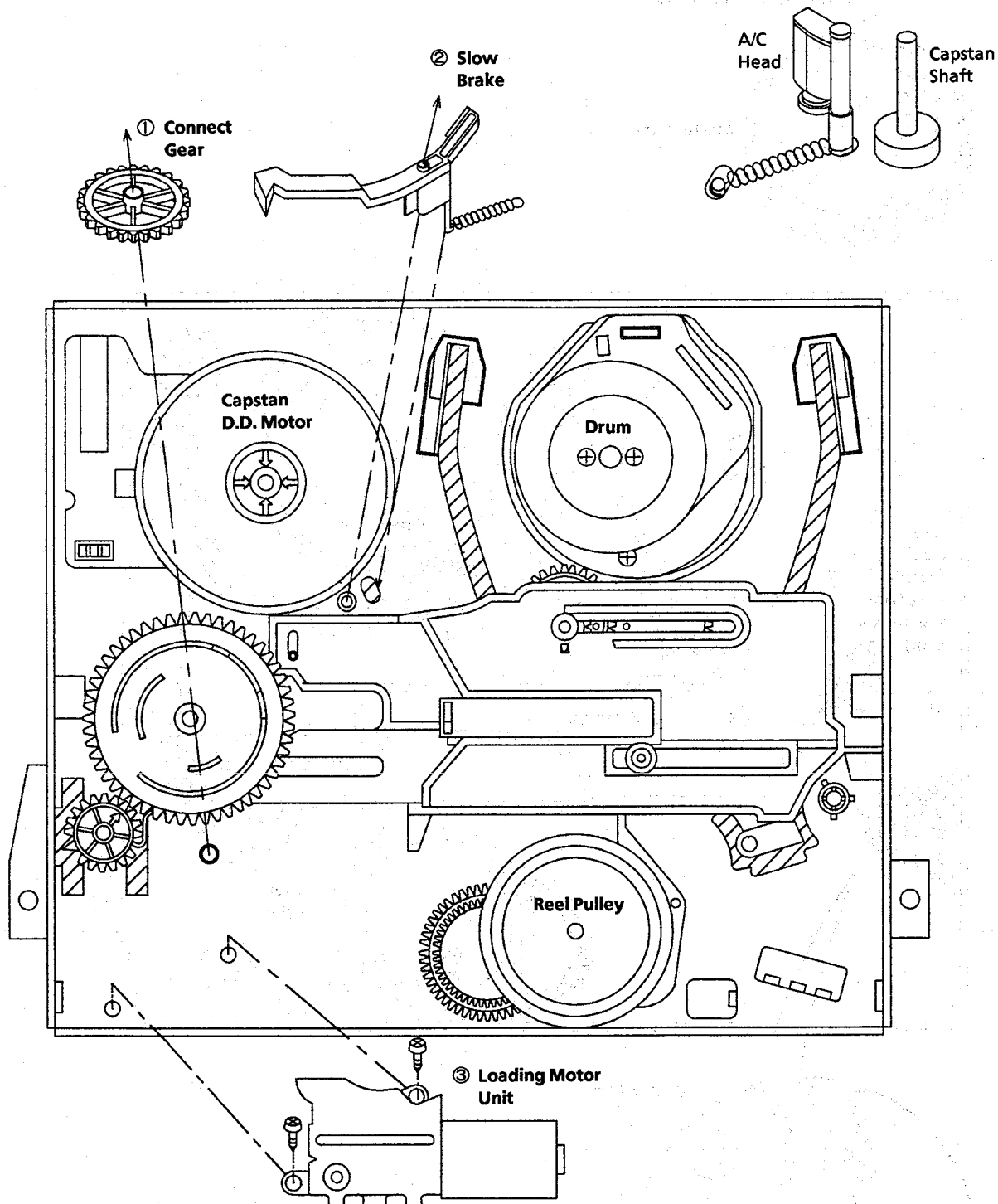


Figure 4-50.

Note:

Before setting up the loading motor, make sure the phase is matched. To do so, turn the connection gear clockwise and check to see if the loading is complete and if the pinch roller comes into contact.

When these actions are made smoothly, return the mechanism to the state as shown above. Finally mount the loading motor unit.

REPLACEMENT OF LOADING MOTOR

● Removal

Remove 2 screws.

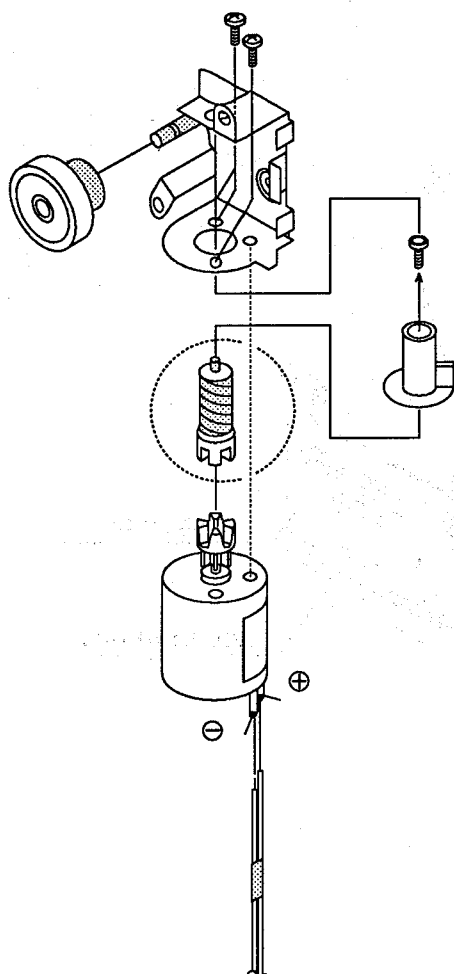


Figure 4-51.

● Replacement

- ① Take out the old loading motor. Place a replacement loading motor as shown above (figure 4-51.).

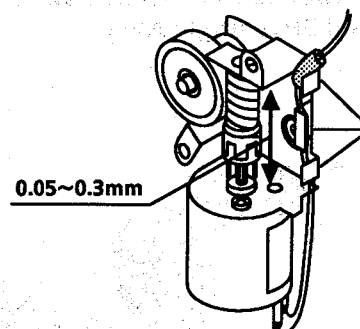
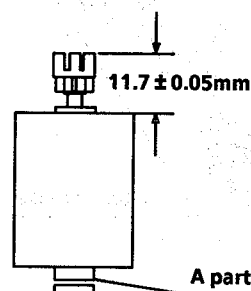


Figure 4-52.

- ② Adjust the worm gear's thrust gap to 0.05 to 0.3 mm.
Turn the adjusting screw to ensure the gap.



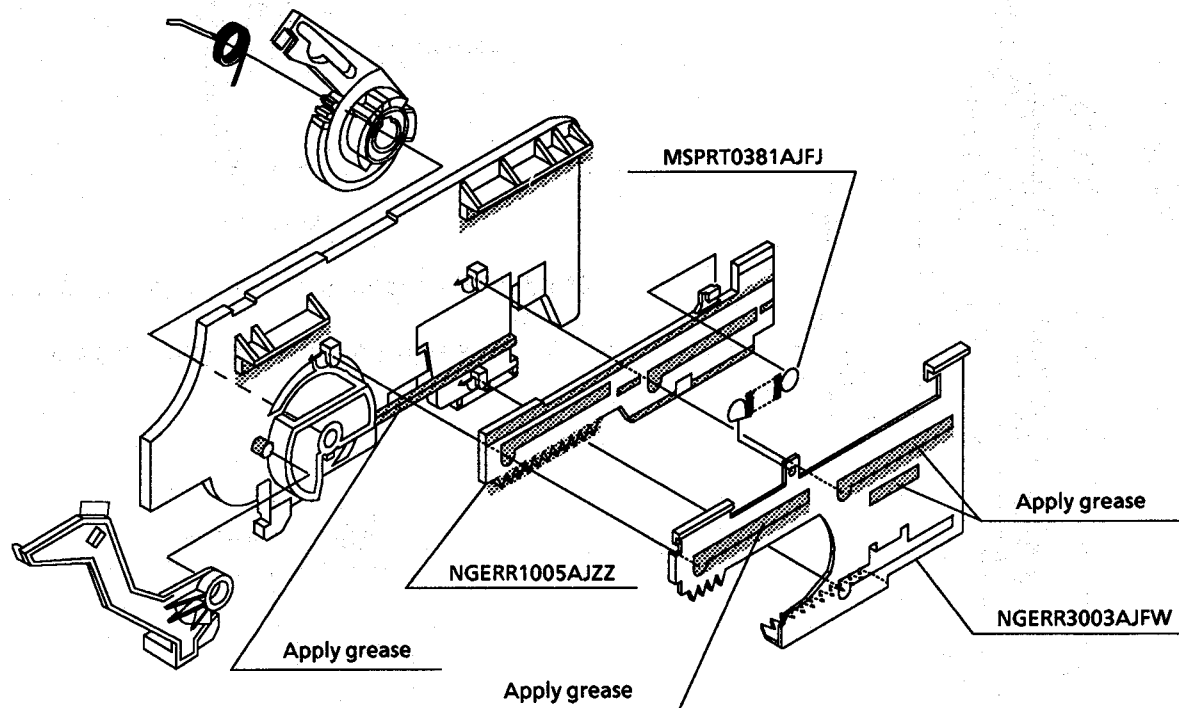
To press the motor in,
receive it by portion A.

Figure 4-53.

Press-fit the loading motor pulley with a force of less than 98N (10 kgf). Be sure that the pulley is 11.7 ± 0.05 mm away from the motor.

ASSEMBLY OF CASSETTE HOUSING

① Drive Gear R and Drive Angle Ass'y



Phase Matching Point

- Fix the drive angle ass'y to the drive gear R as shown in the figure.

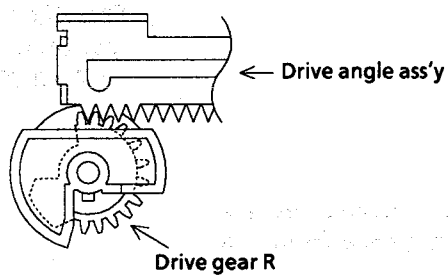


Figure 4-54.

② Synchro Gear, Drive Gear L and Drive Gear R

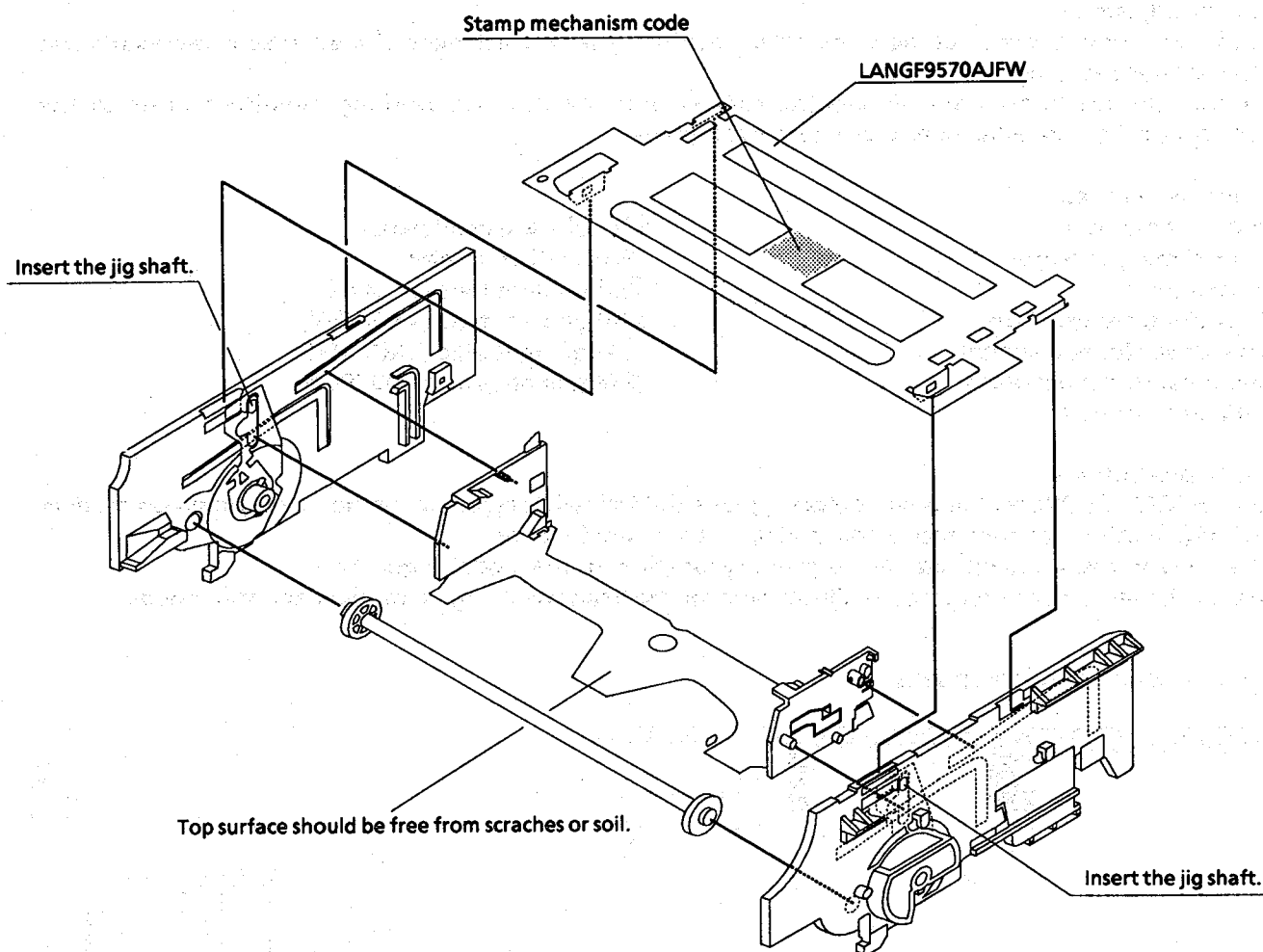


Figure 4-55.

Align the drive gear's round hole with the synchro gear's triangular (\triangle) symbol. Do this alignment for both the drive gears.

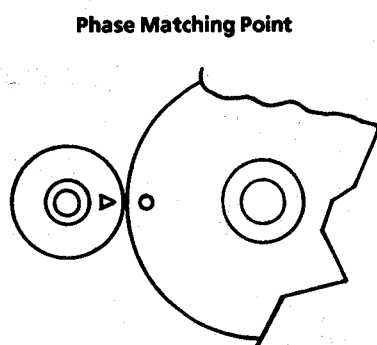


Figure 4-56.

Note:

Do not over-turn both of the drive gears when the phase has been matched. These gears are partially toothless and might come out of mesh with the synchro gear. In such a case, the phase needs re-matching.

5. ELECTRICAL ADJUSTMENT

Notes:

- Before the adjustment:

Electrical adjustments discussed here are often required after replacement of electronic components and mechanical parts such as video heads.

Check that the mechanism and all electric components are in good working condition prior to the adjustments, otherwise adjustments can not be completed.

- Instruments required:

- Colour TV monitor
- Audio signal generator
- DC voltmeter
- Blank video cassette tape
- Screwdriver for adjustment
- Colour bar signal generator
- Frequency counter

- Dual-trace oscilloscope
- AC milli-voltmeter
- Alignment tape (VROCPSV)
- Alignment tape (VROATSV)
- Alignment tape (VROCBFFS)
- Alignment tape (VROCPZJS)

- ※ Servicing precautions

When the IC703 (E2PROM) has been replaced, make the following reprogramming. Depending on models, the IC703 (E2PROM) has been factory-adjusted for its memory function.

It's therefore necessary to reprogram the memory function for the model in question.

Note that the servo circuit requires readjustments for the head switching point, slow and still modes.

- Location of controls and test points

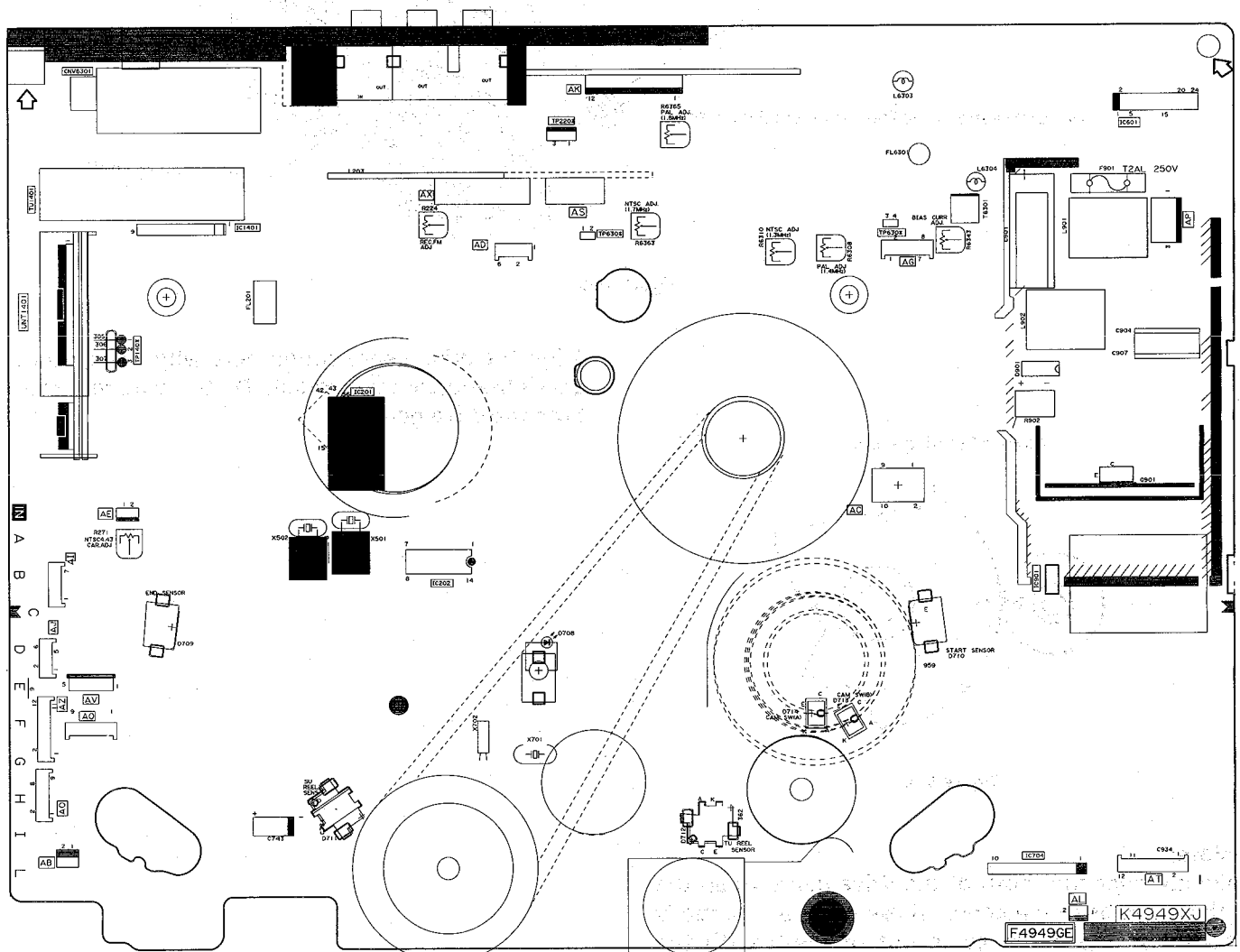


Figure 5-1.

SERVO CIRCUIT ADJUSTMENT

ADJUSTMENT OF PAL SYSTEM HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope and colour TV monitor
Mode	Playback
Cassette	Alignment tape (VROCPSV)
Test point	TP2202 (H. SW. P.) to CH-1 VIDEO OUT jack to CH-2 (CH-1 trigger slope switch at (+), Internal trigger at CH-1 side.)
Specification	$6.5 \pm 0.5H$ (lines)

1. Remove the front panel and play the alignment tape. (VROCPSV) (Playback picture on the monitor screen.)
2. Make for a moment short-circuit between TEST jumpers 3 and 4 located on the timer PWB. Be sure that all the fluorescent display tubes light up into the TEST mode. (See Note below ①)
3. Press the PLAY button, in the automatic adjustment mode.
4. Be sure that "▶" appears in the fluorescent display tubes flashing into the operating.
5. Stop the "▶" appears in the flashing of fluorescent displayed tubes at adjusted.
6. Press the "STOP" button order in the return to normal mode.
7. Make this checking of waveform on the oscilloscope screen be as shown in Figure 5-2. just after the head switching point have been adjusted.
If it is out of specified value, press the "FF" or "REW" button in the make sure the specification.

Notes:

- ① Set-up of TEST mode.
When the adjustment of HEAD SWITCHING POINT, AUTO TRACKING function is invalid.
- ② When the cassette housing control ass'y is removed, setup of mechanism operating mode.
 - 1) Replug the AC power cord a few minutes later.
 - 2) Make a short-circuit between test jumpers 3 and 4 located on the timer PWB to center the tracking.
 - 3) AC power cord is plugged in.
 - 4) You can make mechanism operating mode. Replug the AC power cord a few minutes later.

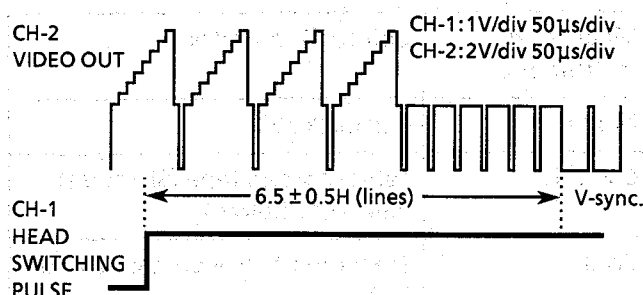


Figure 5-2.

ADJUSTMENT OF PAL SYSTEM SP/LP SLOW TRACKING PRESET

Measuring instrument	Colour TV monitor
Mode	Playback
Cassette	Self-recorded tape (SP/LP mode) (See Note below)
Control	Tracking control buttons (+) or (-)
Specification	Minimized noise on monitor screen

1. Have the unit to receive a good TV broadcast or feed a video signal to the VIDEO IN jack. (See note ② below)
2. Set the tape speed in SP mode by using the remote controller and record the signal on tape.
3. Rewind and play the tape where signal was recorded in above step.
4. Press the "SLOW" button on the remote control, and playback the recorded portion in the slow mode.
5. Make for a moment short-circuit between TEST jumpers 3 and 4 located on the timer PWB. Make sure that all the fluorescent display tubes light up into the TEST mode.
6. Look at the monitor screen and adjust the (+) or (-) TRACKING buttons so that the there is noise disappears from the screen.
7. Press the "PLAY" button to return to normal mode.
8. Play the tape a few seconds then press the "SLOW" button again and make sure there is no noise in the screen.
(For the LP mode put adjustment at the same adjustment way as SP mode.)

Notes:

- ① Self-recorded tape means a cassette whose program was recorded by the unit being adjusted.
- ② The TV program will not be recorded if RCA plug is plugged in the AUDIO/VIDEO input terminals.

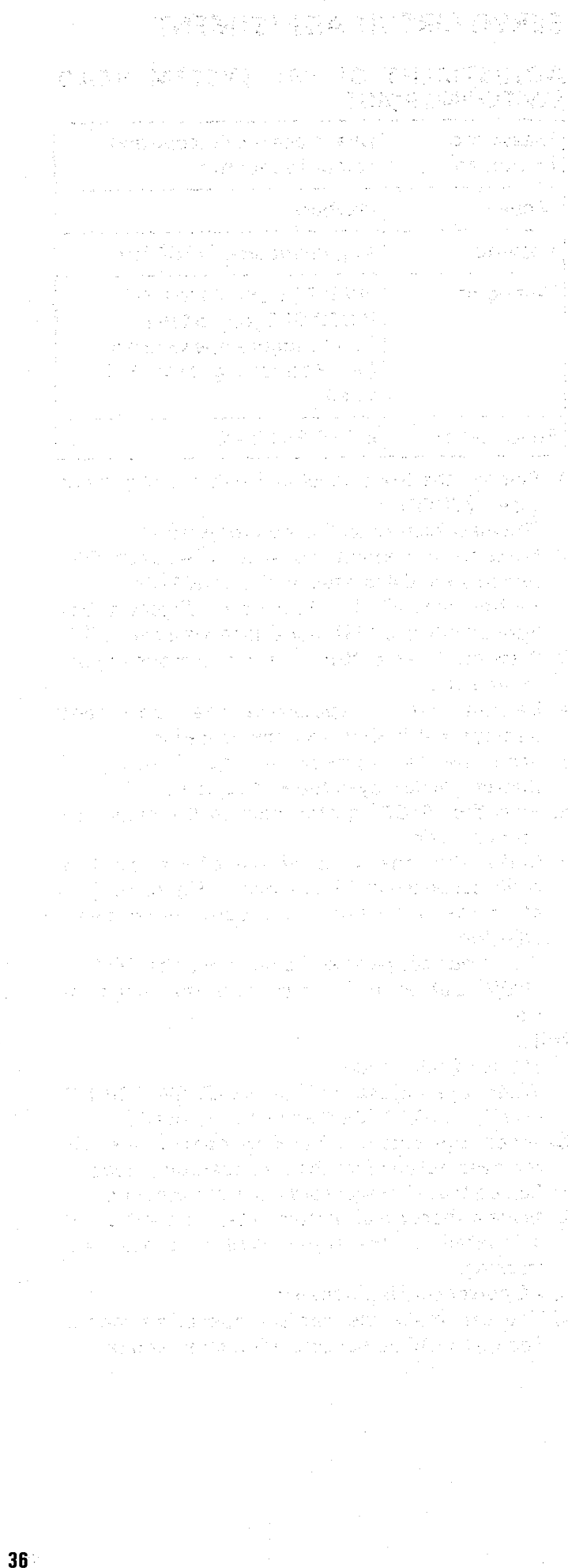
ADJUSTMENT OF PAL SYSTEM FV (False Vertical Sync) OF STILL PICTURE

Measuring instrument	Colour TV monitor
Mode	Playback still
Cassette	Self-recorded tape (SP mode) (See Note below)
Control	Tracking control buttons (+) or (-)
Specification	No vertical jitter of the picture

1. Play a cassette which was recorded by the unit in SP mode.
2. Press the "PAUSE/STILL" button to freeze the picture.
3. Look at the monitor screen and adjust (+) or (-) TRACKING buttons so that the vertical jitter of the picture to be minimized.
4. Play and freeze the self-recorded tape in SP mode and make sure vertical jitter of the picture is not noticeable.
(For the LP mode put adjustment at the same adjustment way as SP mode.)

Note:

Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.



ADJUSTMENT OF NTSC SYSTEM HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope and colour TV monitor
Mode	Playback
Cassette	Alignment tape (VROATSV)
Test point	TP2202 (H. SW. P.) to CH-1 VIDEO OUT jack to CH-2 (CH-1 trigger slope switch at (+), Internal trigger at CH-1 side.)
Specification	$6.5 \pm 0.5H$ (lines)

1. Remove the front panel and play the alignment tape. (VROATSV) (Playback picture on the monitor screen.)
2. Make for a moment short-circuit between TEST jumpers 3 and 4 located on the timer PWB. Be sure that all the fluorescent display tubes light up into the TEST mode. (See Note below ①)
3. Press the PLAY button, in the automatic adjustment mode.
4. Be sure that "▶" appears in the fluorescent display tubes flashing into the operating.
5. Stop the "▶" appears in the flashing of fluorescent displayed tubes at adjusted.
6. Press the "STOP" button oder in the return to normal mode.
7. Make this checking of waveform on the oscilloscope screen be as shown in Figure 5-3. just after the head switching point have been adjusted.
If it is out of specified value, press the "FF" or "REW" button in the make sure the specification.

Notes:

- ① Set-up of TEST mode.
When the adjustment of HEAD SWITCHING POINT, AUTO TRACKING function is invalid.
- ② When the cassette housing control ass'y is removed, setup of mechanism operating mode.
 - 1) Replug the AC power cord a few minutes later.
 - 2) Make a short-circuit between test jumpers 3 and 4 located on the timer PWB to center the tracking.
 - 3) AC power cord is plugged in.
 - 4) You can make mechanism operating mode.
Replug the AC power cord a few minutes later.

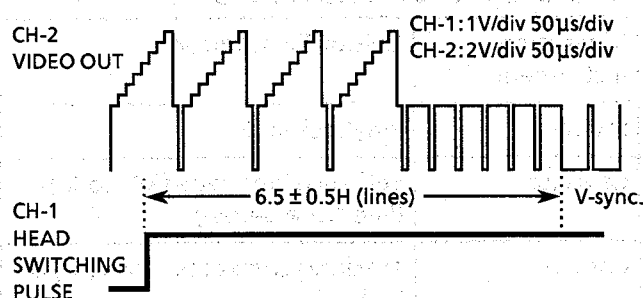


Figure 5-3.

ADJUSTMENT OF NTSC SYSTEM SP/LP SLOW TRACKING PRESET

Measuring instrument	Colour TV monitor
Mode	Playback
Cassette	Self-recorded tape (SP/EP mode) (See Note below)
Control	Tracking control buttons (+) or (-)
Specification	Minimized noise on monitor screen

1. Have the unit to receive a good TV broadcast or feed a video signal to the VIDEO IN jack. (See note ② below)
2. Set the tape speed in SP mode by using the remote controller and record the signal on tape.
3. Rewind and play the tape where signal was recorded in above step.
4. Press the "SLOW" button on the remote control, and playback the recorded portion in the slow mode.
5. Make for a moment short-circuit between TEST jumpers 3 and 4 located on the timer PWB. Make sure that all the fluorescent display tubes light up into the TEST mode.
6. Look at the monitor screen and adjust the (+) or (-) TRACKING buttons so that the there is noise disappears from the screen.
7. Press the "PLAY" button to return to normal mode.
8. Play the tape a few seconds then press the "SLOW" button again and make sure there is no noise in the screen.
(For the EP mode put adjustment at the same adjustment way as SP mode.)

Notes:

- ① Self-recorded tape means a cassette whose program was recorded by the unit being adjusted.
- ② The TV program will not be recorded if RCA plug is plugged in the AUDIO/VIDEO input terminals.

ADJUSTMENT OF NTSC SYSTEM FV (False Vertical Sync) OF STILL PICTURE

Measuring instrument	Colour TV monitor
Mode	Playback still
Cassette	Self-recorded tape (SP mode) (See Note below)
Control	Tracking control buttons (+) or (-)
Specification	No vertical jitter of picture

1. Play a cassette which was recorded by the unit in SP mode.
 2. Press the PAUSE/STILL button to freeze the picture.
 3. Look at the monitor screen and adjust (+) or (-) TRACKING buttons so that the vertical jitter of the picture to be minimized.
 4. Play and freeze the self-recorded tape in SP mode and make sure vertical jitter of the picture is not noticeable.
- (For the EP mode put adjustment at the same adjustment way as SP mode.)

Note:

Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

Y/C CIRCUIT ADJUSTMENT

CHECKING OF VIDEO E-E LEVEL

Measuring instrument	Oscilloscope
Mode	E-E or Record
Input signal	EIA colour bar (1.0Vp-p)
Test point	VIDEO OUT jack
Specification	$1.0 \pm 0.1\text{Vp-p}$

1. Connect a 75 ohm terminating resistor to the VIDEO OUT jack and connect an oscilloscope across this terminating resistor.
(See Note below.)
2. Feed a colour bar signal to the VIDEO IN jack.
3. Make sure that the E-E signal amplitude is 1.0 Vp-p as shown in Figure 5-4.

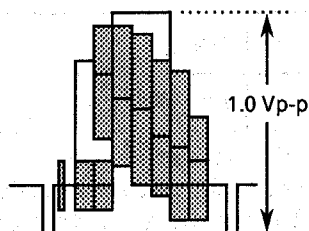


Figure 5-4.

Note:

If the 75 ohm terminating resistor is missing, the signal amplitude will be doubled.

CHECKING OF WHITE CLIP LEVEL

Measuring instrument	Oscilloscope
Mode	E-E or Record
Input signal	EIA colour bar (1.0Vp-p)
Test point	Pin (48) of IC201, GND
Specification	$190 \pm 5\%$ (See note below)

1. Connect a oscilloscope to Pin (48) of IC201 and GND.
2. Feed the colour bar signal to the VIDEO IN jack and set the unit in E-E or recording mode.
3. Make sure that the overshoot of the video signal is clipped at 190% as shown in Figure 5-5.

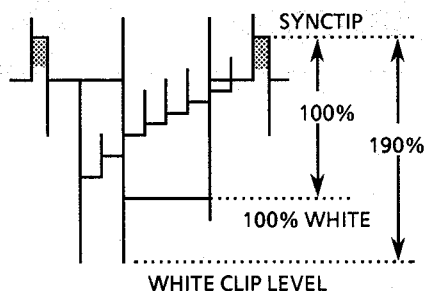


Figure 5-5.

Note:

From sync tip to white peak, the level is 100%.
The white clip level is 90% above the white level.

CHECKING OF RECORD LEVEL

Measuring instrument	Oscilloscope
Mode	Record mode (PAL LP mode) Record mode (SECAM LP mode) (VC-MH80 ONLY)
Input signal	PAL colour bar signal (1.0Vp-p) SECAM colour bar signal (1.0Vp-p) (VC-MH80 ONLY)
Control	R224 (REC-Y LEVEL)
Specifications	Chroma (Red) : $44 \pm 8\text{mVp-p}$ Chroma (Cyan) : $44 \pm 8\text{mVp-p}$ (VC-MH80 ONLY) Sync tip: $140 \pm 15\text{mVp-p}$

1. Feed the PAL colour bar signal to the VIDEO IN jack and set the unit in recording mode.
2. Connect the oscilloscope to test points TP301 (Sig.) and TP302 (GND).
3. Set the unit in the LP recording mode.
4. Turn R224 (REC-Y LEVEL) to minimize the FM luminance signal.
5. Make sure so that the amplitude of the chroma (red) portion is specified as shown in Figure 5-6 (a).
6. In the next place put the unit in SECAM mode with the feed the SECAM colour bar signal to the VIDEO IN jack and set the unit in recording mode. (VC-MH80 ONLY)
7. Make sure so that the amplitude of the chroma (cyan) portion is specified as shown in Figure 5-6 (c). (VC-MH80 ONLY)
8. Again feed the PAL colour bar signal to the VIDEO IN jack and set the unit in recording mode.
9. Adjust R224 (REC-Y LEVEL) so that the amplitude of sync tip portion is specified as shown in Figure 5-6 (b).

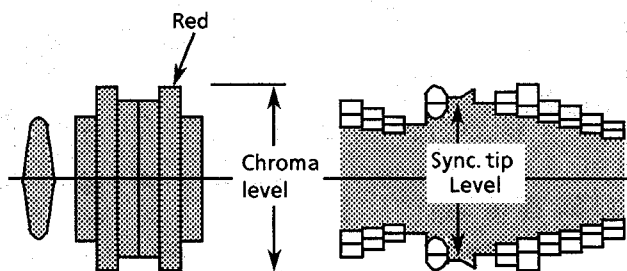


Figure 5-6(a).

Figure 5-6(b).

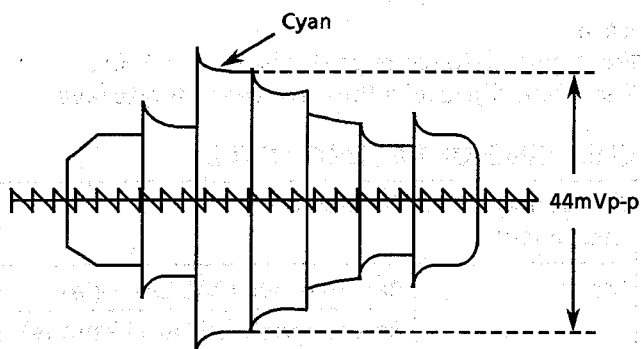


Figure 5-6 (c).

CHECKING OF PLAYBACK LEVEL

Measuring instrument	Oscilloscope
Mode	Record/Playback
Input signal	EIA colour bar (1.0Vp-p)
Test point	VIDEO OUT jack
Specification	$1.0 \pm 0.1\text{Vp-p}$

1. Be sure that E-E level has been correctly specified.
2. Connect a 75 ohm terminating resistor to the VIDEO OUT jack and connect an oscilloscope across this terminating resistor. (See Note below.)
3. Feed a colour bar signal to the VIDEO IN jack and set the unit in recording mode.
4. Play the colour bar portion of the recorded tape.
5. Make sure that the output signal amplitude is 1.0Vp-p as shown in Figure 5-7.

Note:

If the 75 ohm terminating resistor is missing, the signal amplitude will be doubled.

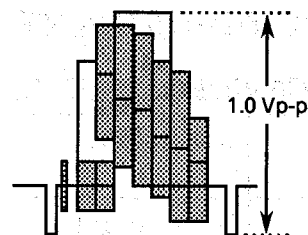


Figure 5-7.

ADJUSTMENT OF VCO

Measuring instrument	DC voltmeter, Monitor TV
Mode	Recording or E-E
Input signal	EIA colour bar (1.0Vp-p)
Test point	TP5901 (Sig.), TP5902 (GND)
Control	C5902
Specification	$2.5 \pm 0.25\text{Vp-p}$

1. Have the unit receiver a good TV broadcast or feed a colour bar signal to the VIDEO IN jack.
2. Connect a DC voltmeter to test points TP5901 (Sig.) and TP5902(GND).
3. Press the MODE OSD button on the remote control so that normal screen is selected.
4. Adjust C5902 (VCO control) so that the DC voltmeter reads $2.5 \pm 0.25\text{V}$ and the on screen display is shown normally.

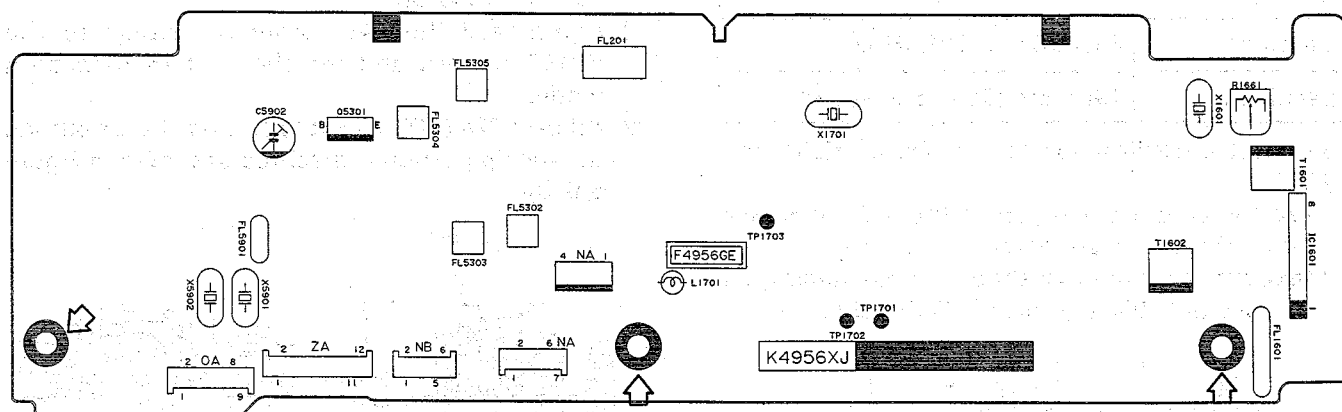


Figure 5-8.

Hi-Fi AUDIO CIRCUIT ADJUSTMENT

IMPORTANT NOTES ON Hi-Fi SECTION

1. Though adjustment procedures are written for the left channel, those for the right channel are basically the same.

Words shown in the bracket "[]" are for the right channel only.

2. SERVICING OF THE Hi-Fi block

1) "RECORD MODE"

Under this condition record a stereo broadcast on tape and adjust control.

2) "PLAYBACK MODE"

Under this condition, play a Hi-Fi tape and adjust control.

(You can select the audio output channels in the playback mode by pressing the MENU on the remote control or the SET UP button on the VCR.

Set the desired Audio output mode by pressing the (+) or (-) button.

The Audio Output mode will change in the normally select Hi-Fi L + R mode with the pressing the (+) or (-) button both the L and R audio channels are taken from the Hi-Fi mode track. The L and R indicators light up on the multi-function display in this mode.)

CHECKING OF E-E LEVEL

Measuring instrument	AC milli-voltmeter
Mode	E-E or Recording mode
Input signal	1kHz, - 8dBs
Test point	AUDIO OUT jack
Specification	- 8 ± 2dBs

1. Feed the audio signal shown in table to the left channel of the AUDIO IN jack.
2. Connect an AC milli-voltmeter to left channel of the AUDIO OUT jack and right channel of the AUDIO OUT jack.
3. Put the unit in E-E or recording mode with the make sure that the milli-voltmeter reads specified value.
(Check the level is less than 2dB both Left channel and Right channels.)

ADJUSTMENT OF FM CARRIER FREQUENCY

Measuring instrument	Frequency counter
Mode	E-E or REC mode
Input signal	Not required
Test point	TP6301 (Sig.) ~ TP6302 (GND)
Controls	R6310 [R6363] NTSC carrier frequency control R6308 [R6365] PAL carrier frequency control
Specification	1.3 [1.7] MHz ± 5kHz (at NTSC mode) 1.4 [1.8] MHz ± 5kHz (at PAL mode)

1. Put the unit in A/V input mode. Do not feed any signal to the VIDEO IN JACK.
(Disconnect any cable from video input terminal.)
2. Put the unit in E-E or recording mode and connect a frequency counter to test points TP6301 (Sig.) and TP6302 (GND).
3. Put the unit in NTSC mode with the adjust R6310 [R6363] (NTSC carrier frequency control) so that the counter reads specified value.
4. In the next place put the unit in PAL mode with the adjust R6308 [R6365] (PAL carrier frequency control) so that the counter reads specified value.

ADJUSTMENT OF LINEAR AUDIO BIAS CURRENT

Measuring instrument	Oscilloscope
Mode	Record
Input signal	Not required
Test point	TP6303 (GND) ~ TP6304 (Sig.)
Control	R6343 Bias current control
Specification	2.5 ± 0.1mVrms

1. Connect the oscilloscope to test points TP6303 (GND) and TP6304 (Sig.).
(Use TP6304 for ground lead.)
2. Put the unit in recording mode with the adjust R6343 so that the signal amplitude is 2.5mVrms.

CHECKING OF LINEAR AUDIO PLAYBACK LEVEL

Measuring instrument	AC milli-voltmeter
Mode	Playback
Input signal	Alignment tape. (VROCPZJS)
Test point	AUDIO OUT jack
Specification	$-12.0 \pm 2\text{dBs}$

1. Connect an AC milli-voltmeter to the AUDIO OUT jack.
2. Play the alignment tape (VROCPZJS).
3. Make sure that the audio output level is as specified.
If it is out of specified value, verify the bias current (ADJUSTMENT OF LINEAR AUDIO BIAS CURRENT).

CHECKING OF Hi-Fi AUDIO PLAYBACK LEVEL

Measuring instrument	AC milli-voltmeter
Mode	Playback
Input signal	Alignment tape. (VROCBFFS)
Test point	AUDIO OUT jack
Specification	$-8.0\text{dBs} \pm 2\text{dBs}$

1. Connect an AC milli-voltmeter to the AUDIO OUT jack.
2. Play the alignment tape (VROCBFFS).
3. Make sure that the audio output level is as specified.

Note: Check the PLAYBACK level is less than 2.0dB both Left channel and Right channels.

CHECKING OF Hi-Fi/NORMAL AUDIO SELF-RECORD/PLAYBACK LEVEL

Measuring instrument	AC milli-voltmeter
Mode	Record/Playback
Input signal	1kHz, -8.0dBs
Test point	AUDIO OUT jack
Specification	$-8.0\text{dBs} \pm 3\text{dBs}$

1. Feed the audio signal shown in table to the left channel of the AUDIO IN jack.
2. Connect an AC milli-voltmeter to the left channel of the AUDIO OUT jack and right channel of the AUDIO OUT jack.
3. Make sure so that the milli-voltmeter reads specified value.

Note: Check the PLAYBACK level is less than 2.0dB both Left channel and Right channels.

CHECKING OF ERASE VOLTAGE AND OSCILLATION FREQUENCY

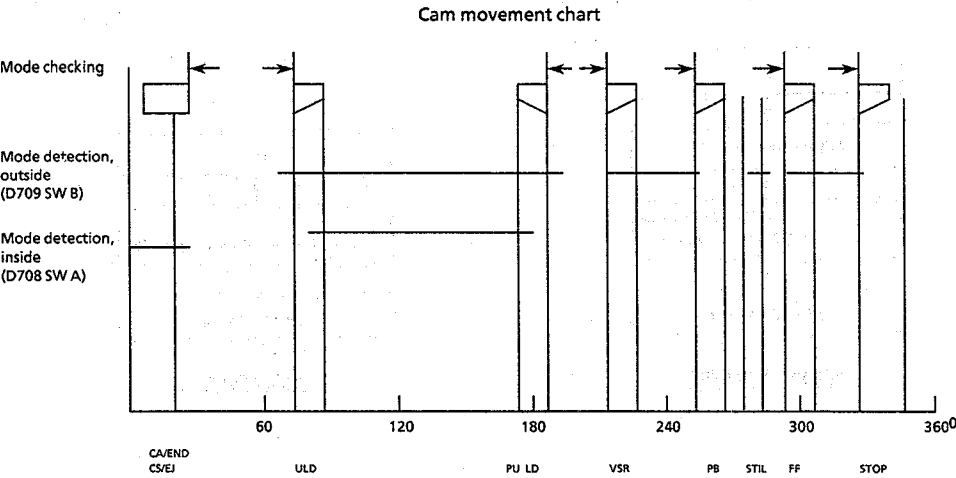
Measuring instrument	Oscilloscope
Mode	Record
Test point	Full erase head
Control	T6301
Specification	$70 \pm 5\text{kHz}$, 40Vp-p or greater

1. Put the unit in record mode.
2. Connect an oscilloscope across the full erase head.
3. Make sure the erase voltage across the full erase head is approx. 40Vp-p or more and frequency is $70 \pm 5\text{kHz}$.

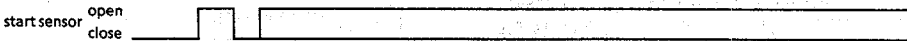
6. MECHANISM OPERATION FLOW CHART AND TROUBLESHOOTING GUIDE

MECHANISM OPERATION FLOWCHART

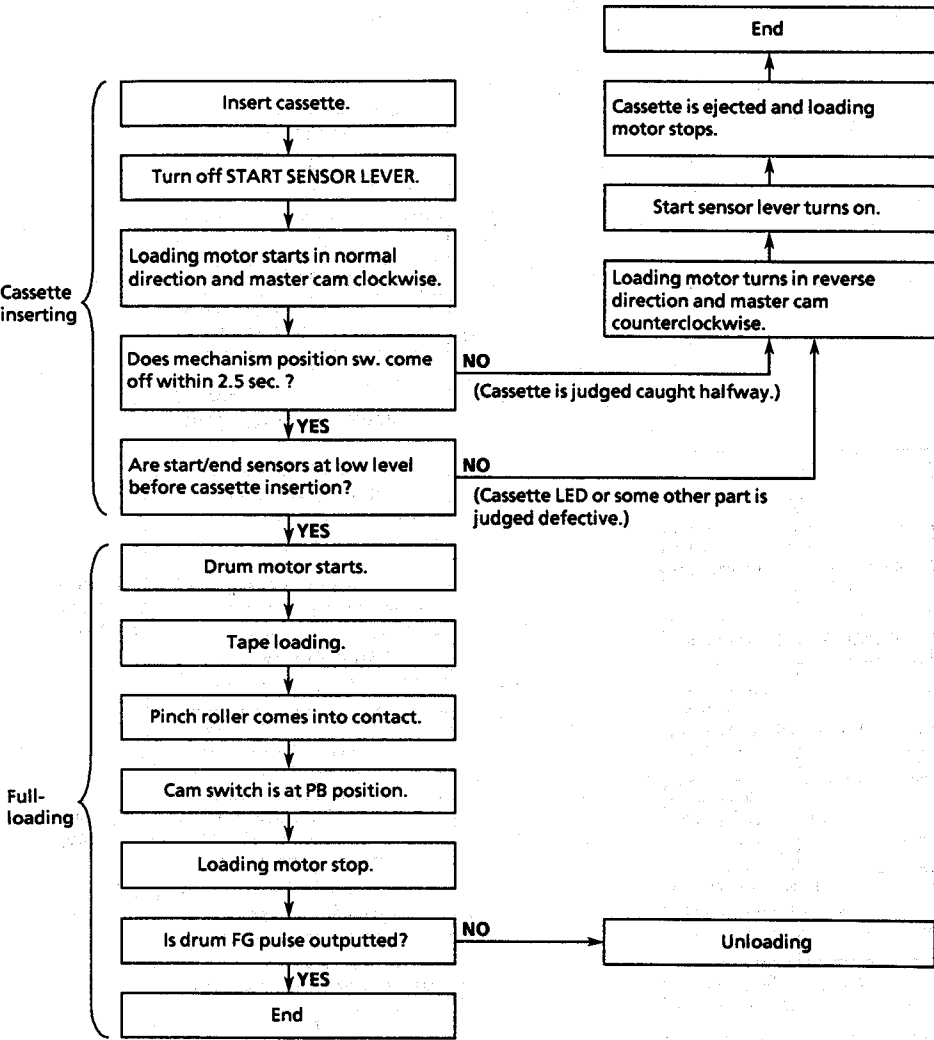
* This flowchart describes the outline of the mechanism's operation, but does not give its details.



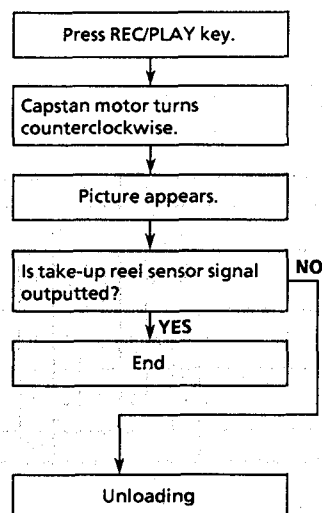
	CS/EI						ULD		PU LD		VSR		PB	STL	FF	STOP		
Mode detection, outside	0	0	0	0	0	1	1		1		0	1	1	0	0	1	1	0
Mode detection, inside	1	1	0	0	0	0	1		1	0	0	0	0	0	0	0	0	0
S sensor	1	1	0	1	1 or 0													



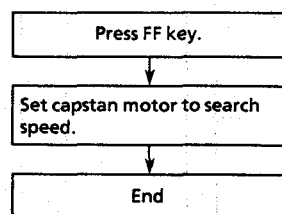
CASSETTE INSERTION → STOP



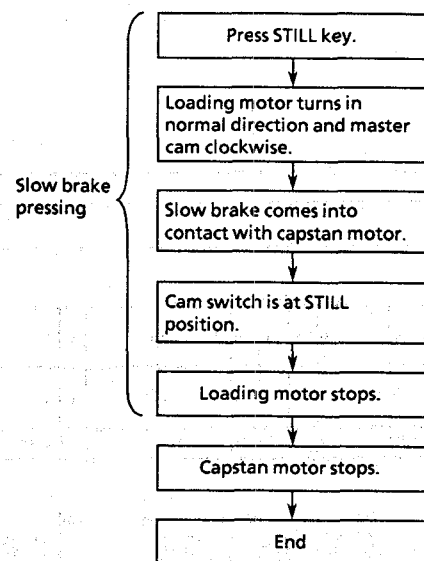
STOP → REC/PLAY



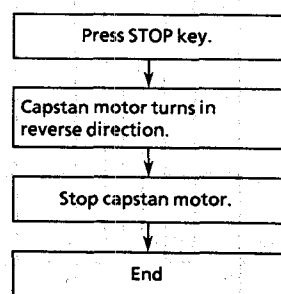
PLAY → VSF



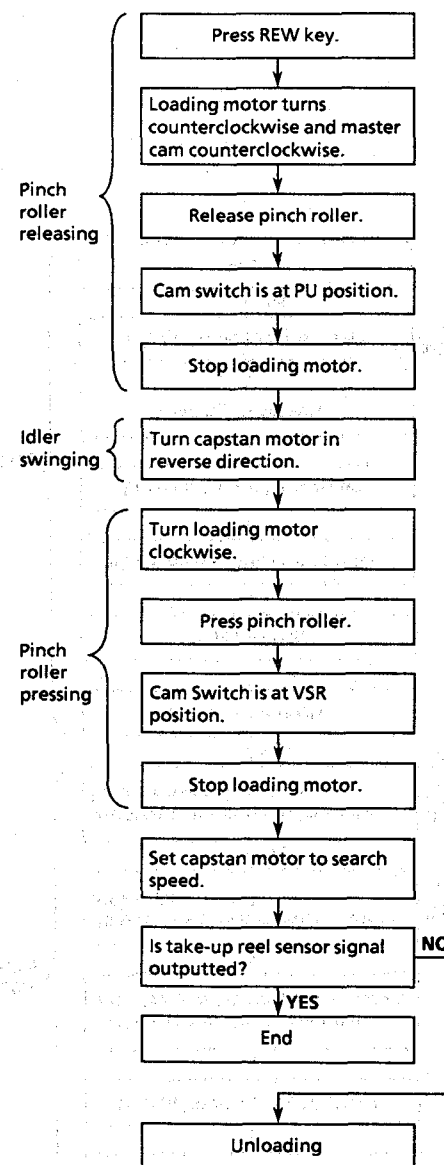
PLAY → STILL



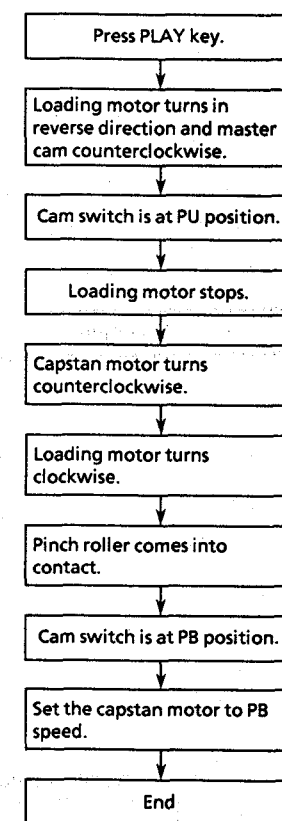
REC/PLAY → STOP



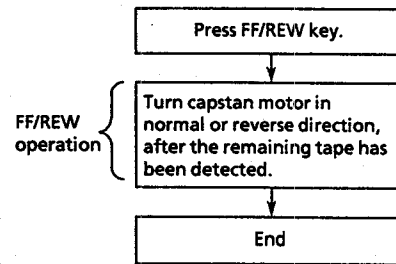
PLAY → VSR



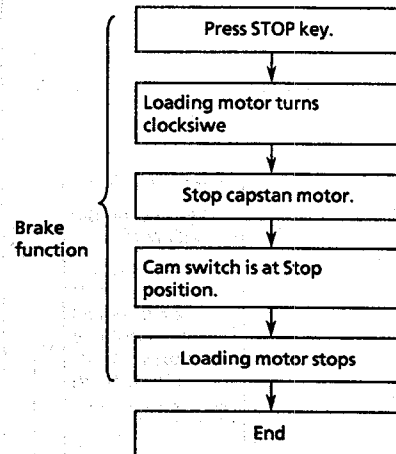
VSR → PLAY



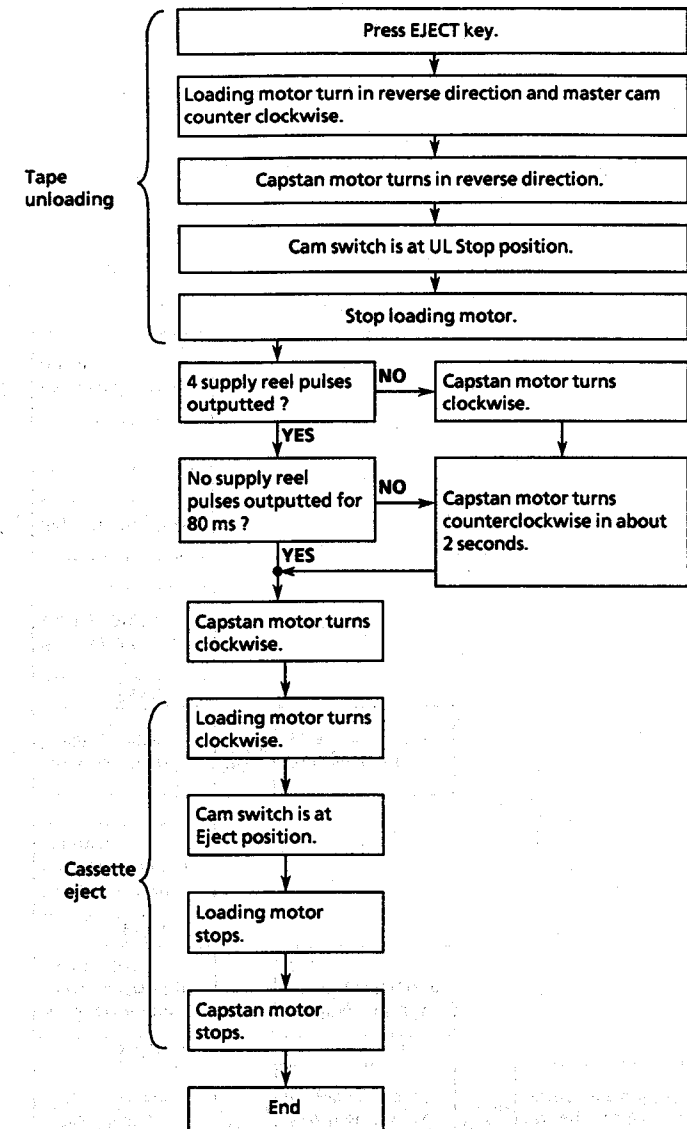
STOP → FF/REW



FF/REW → STOP



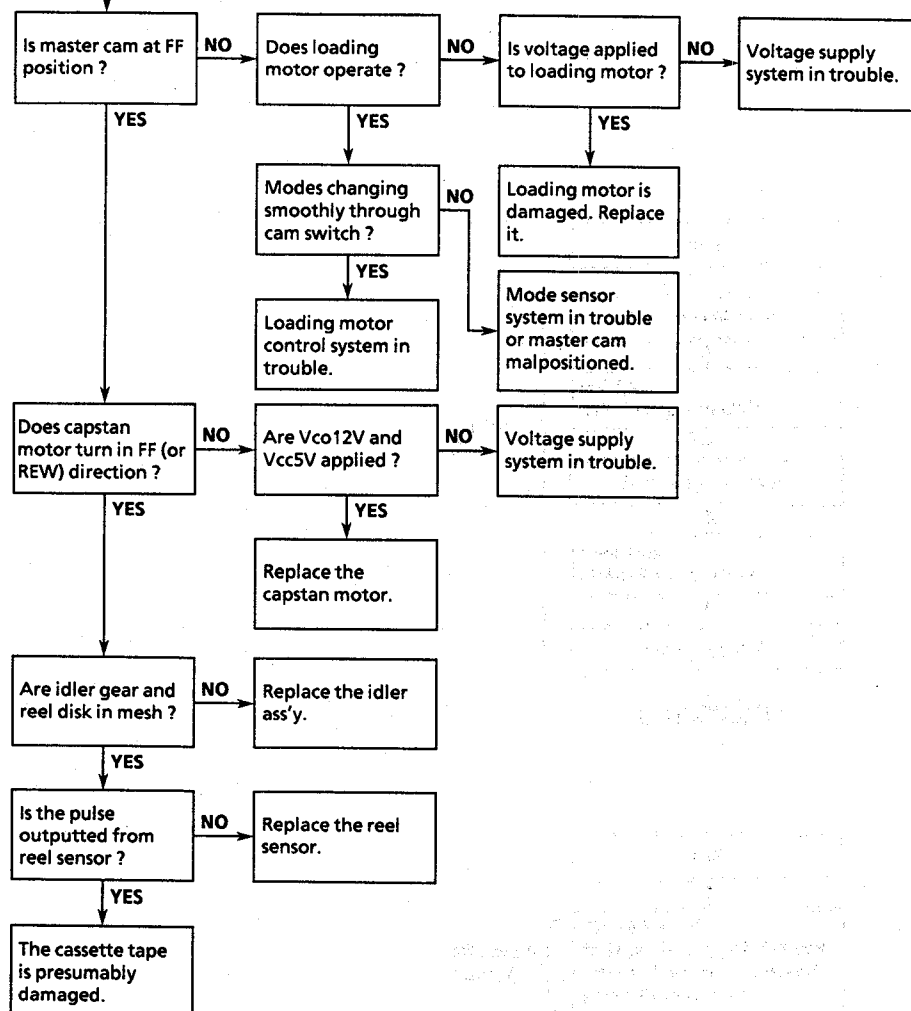
STOP → CASSETTE EJECT



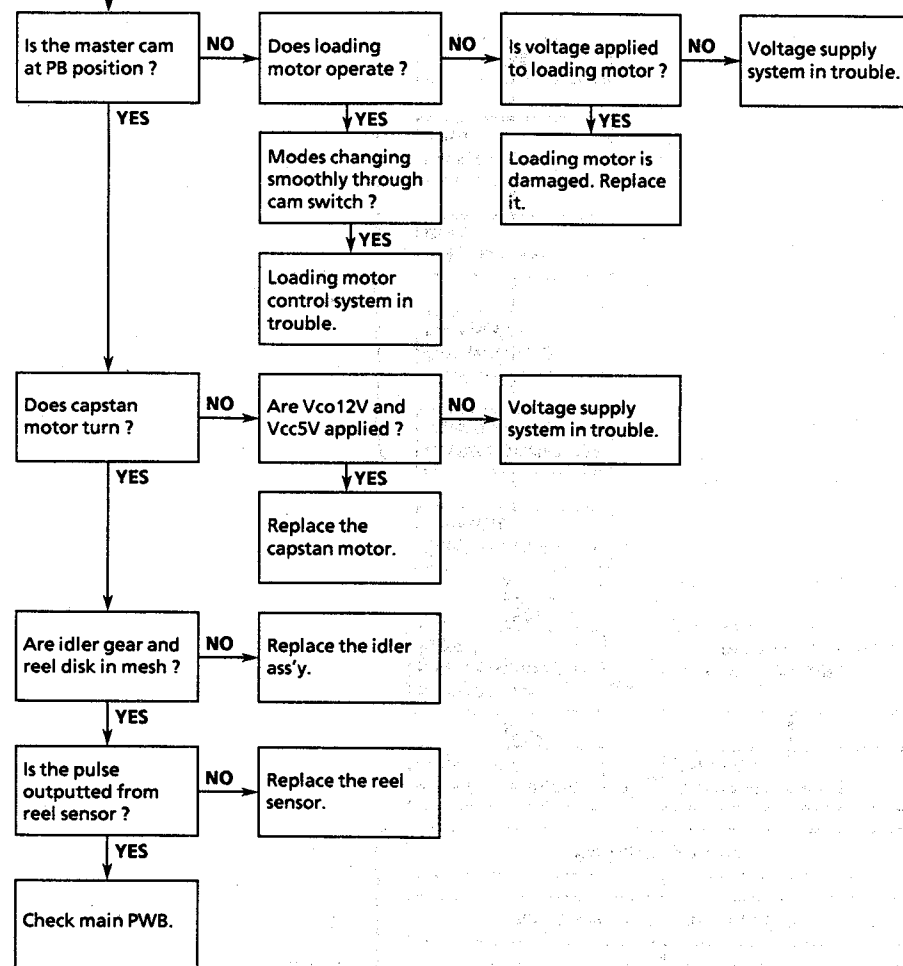
MECHANISM TROUBLESHOOTING

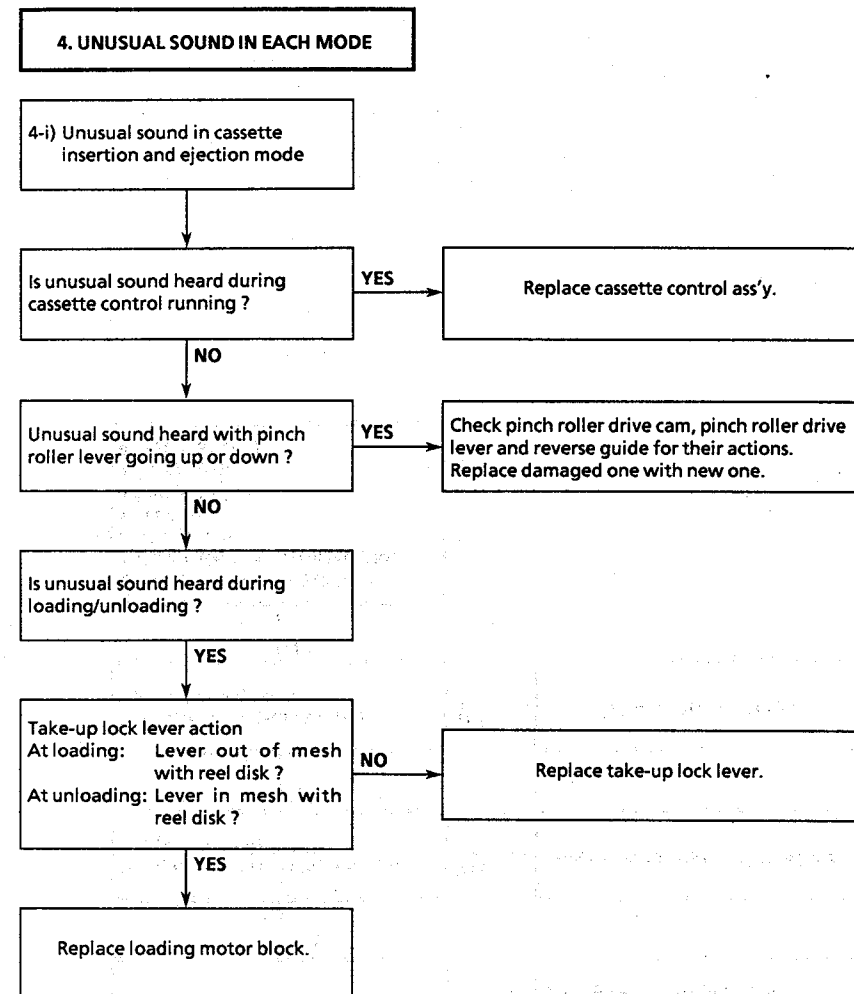
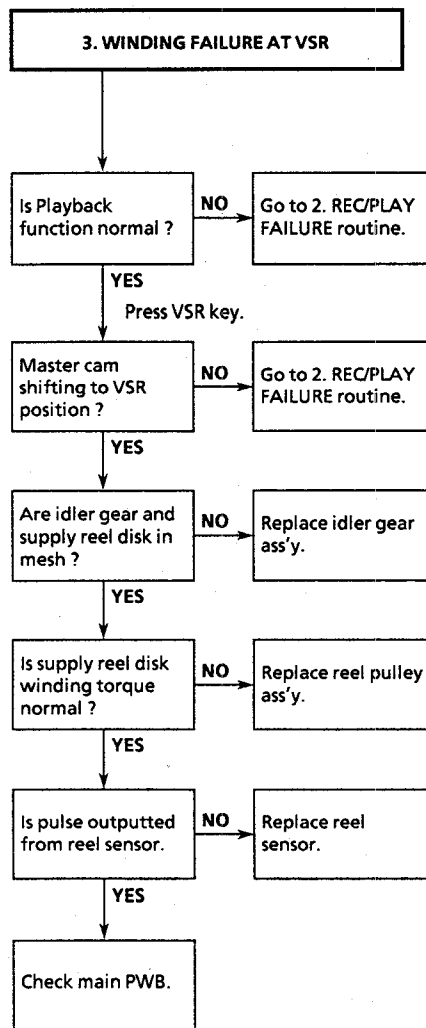
1. FF/REW FAILURE (NO TAPE WINDING)

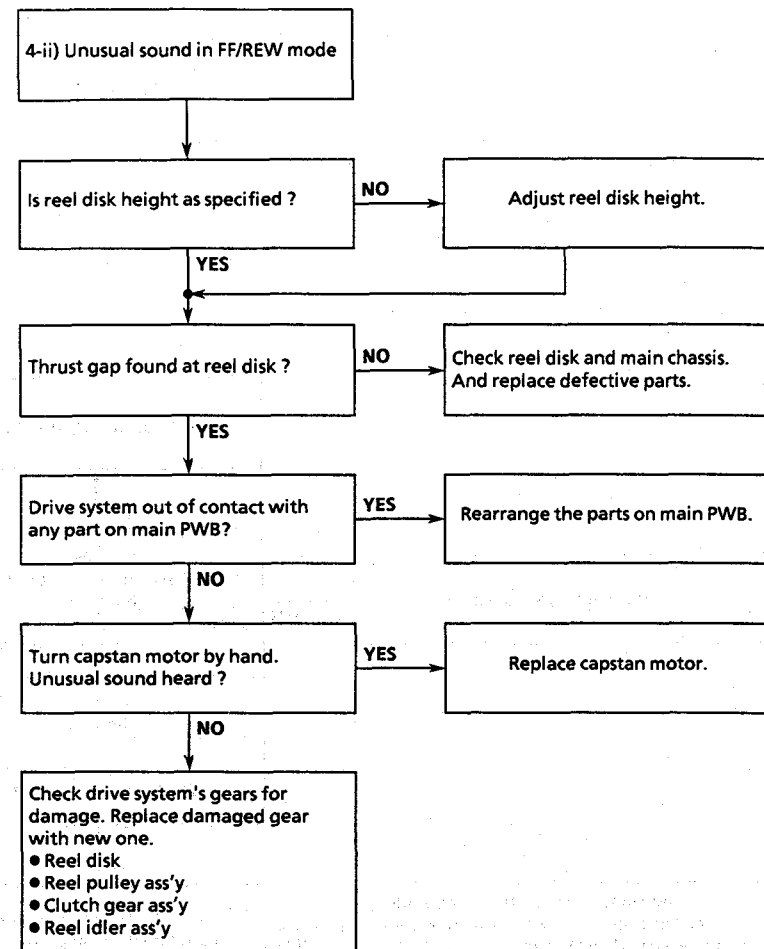
Press FF key.



2. REC/PLAY FAILURE (MODE RELEASE)

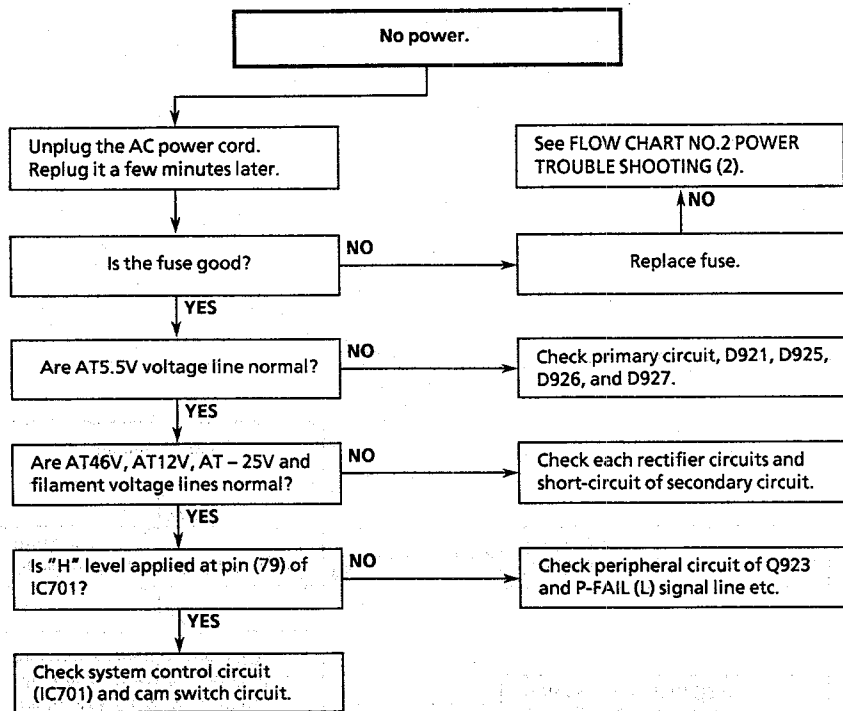




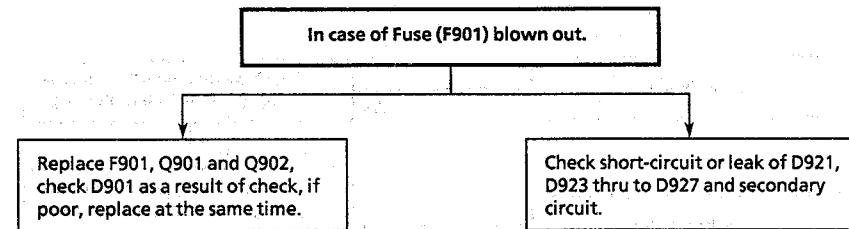


7. TROUBLESHOOTING

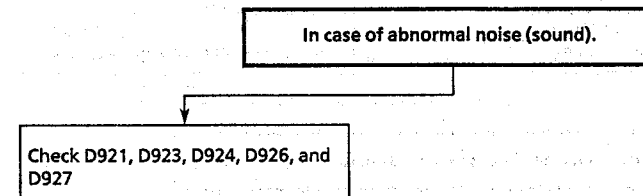
FLOW CHART NO.1 POWER TROUBLESHOOTING (1)



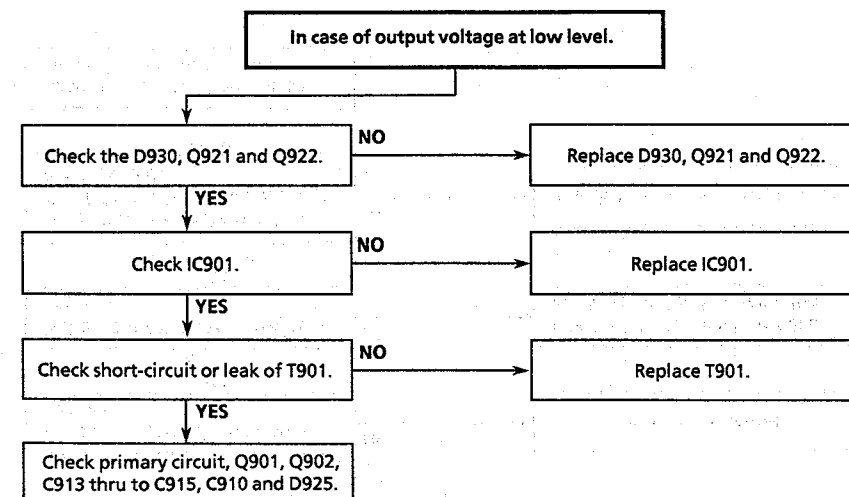
FLOW CHART NO.2 POWER TROUBLESHOOTING (2)



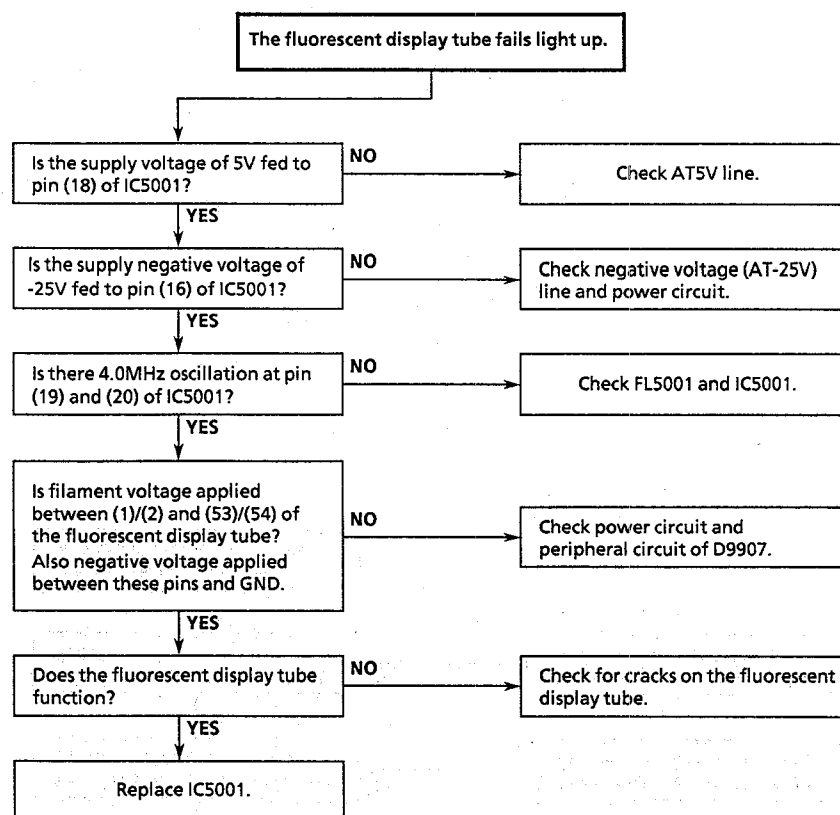
FLOW CHART NO.3 POWER TROUBLESHOOTING (3)



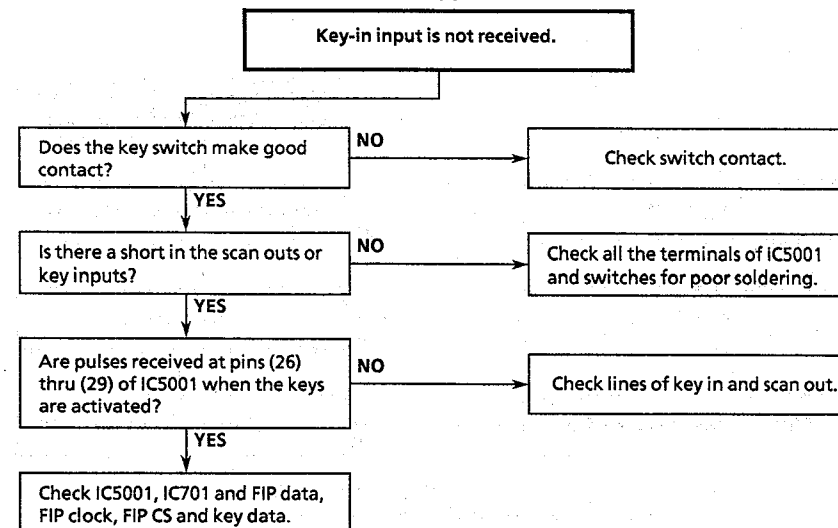
FLOW CHART NO.4 POWER TROUBLESHOOTING (4)



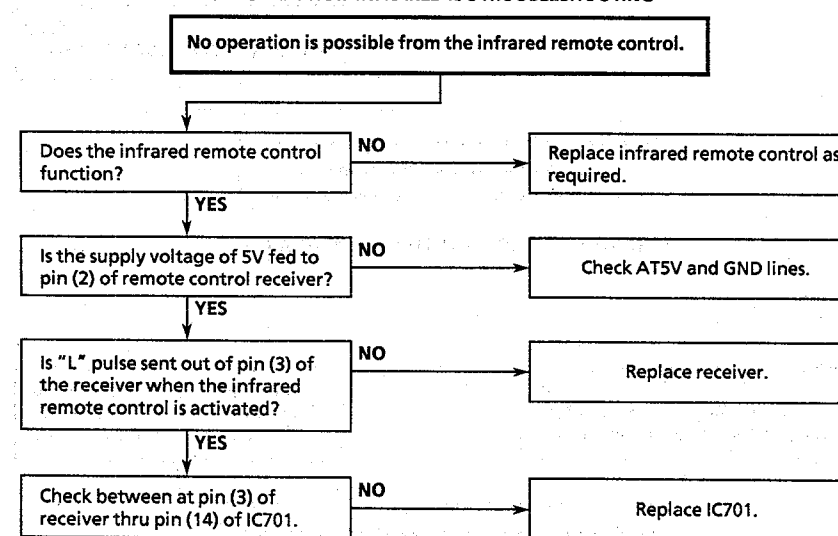
FLOW CHART NO.5 TIMER (1) TROUBLESHOOTING



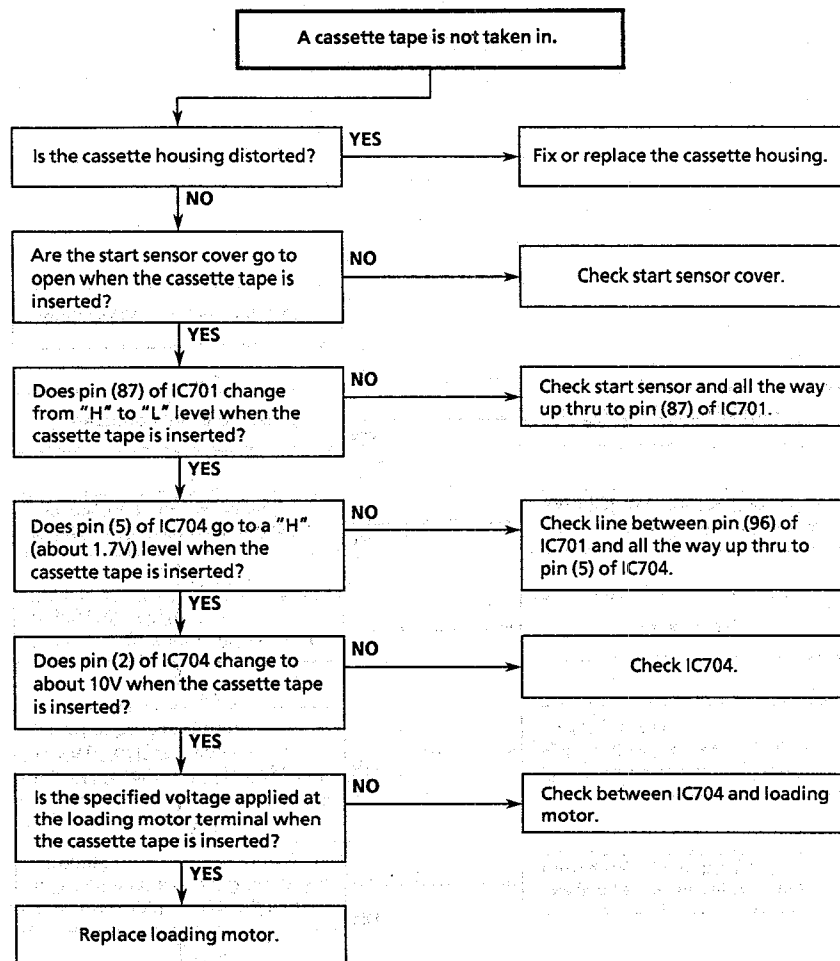
FLOW CHART NO.6 TIMER (2) TROUBLESHOOTING



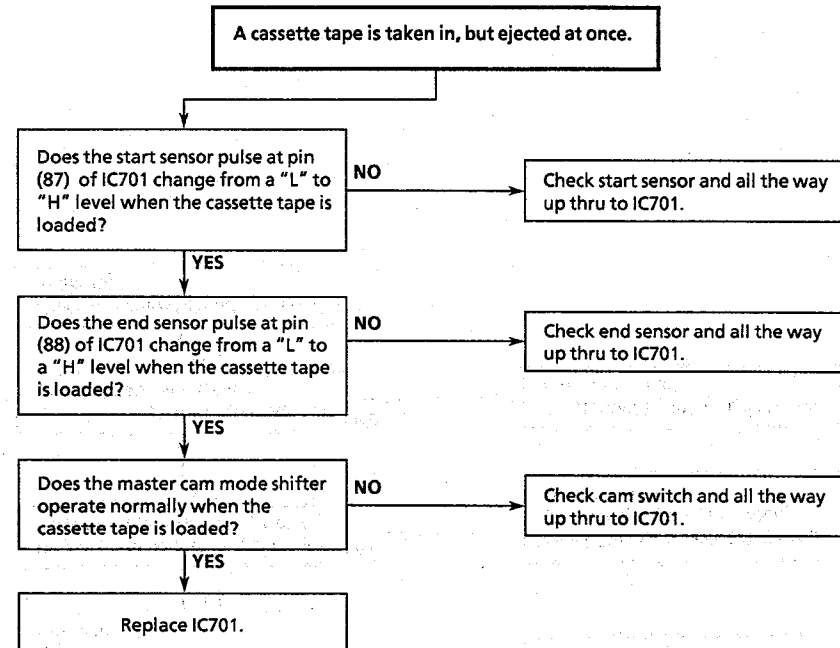
FLOW CHART NO.7 INFRARED R/C TROUBLESHOOTING



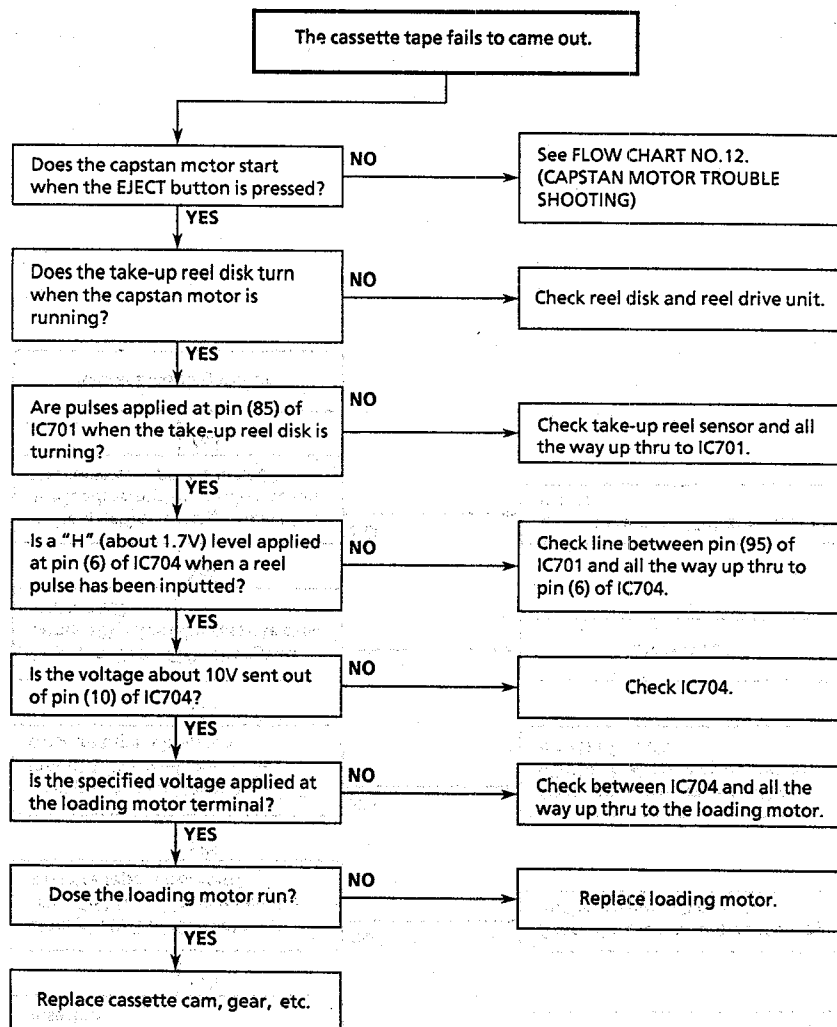
FLOW CHART NO.8 CASSETTE CONTROL TROUBLESHOOTING (1)



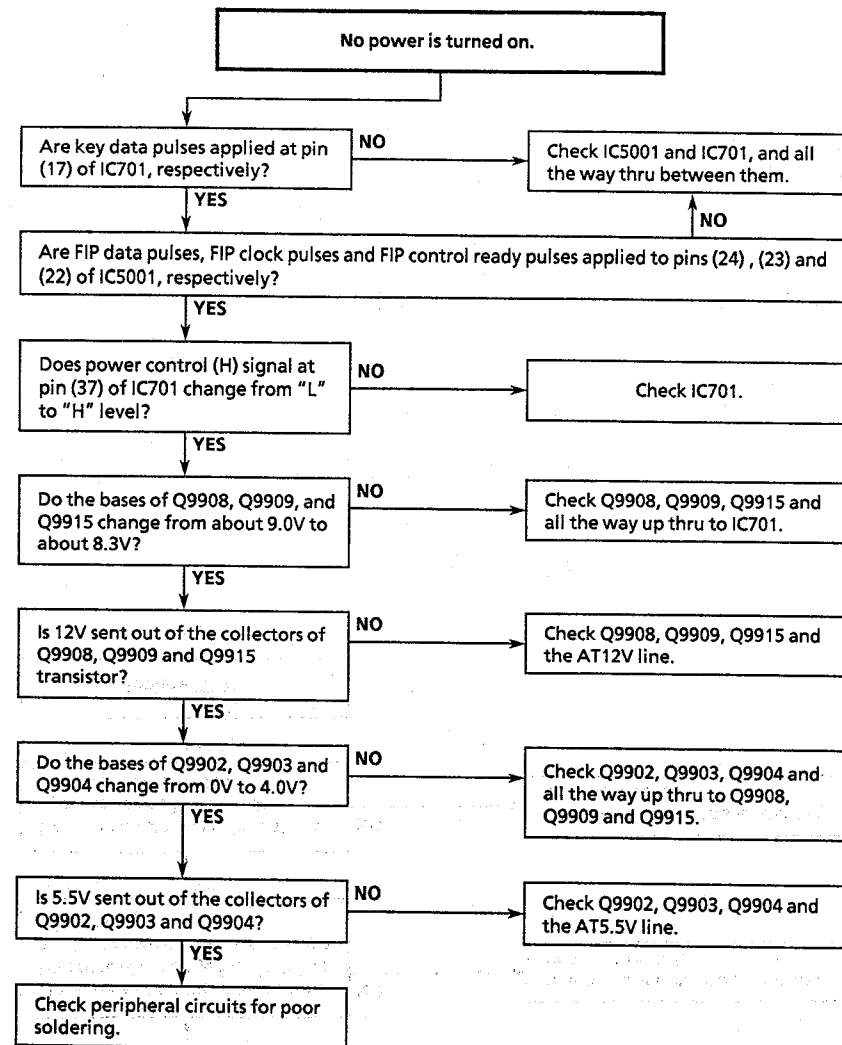
FLOW CHART NO.9 CASSETTE CONTROL TROUBLESHOOTING (2)



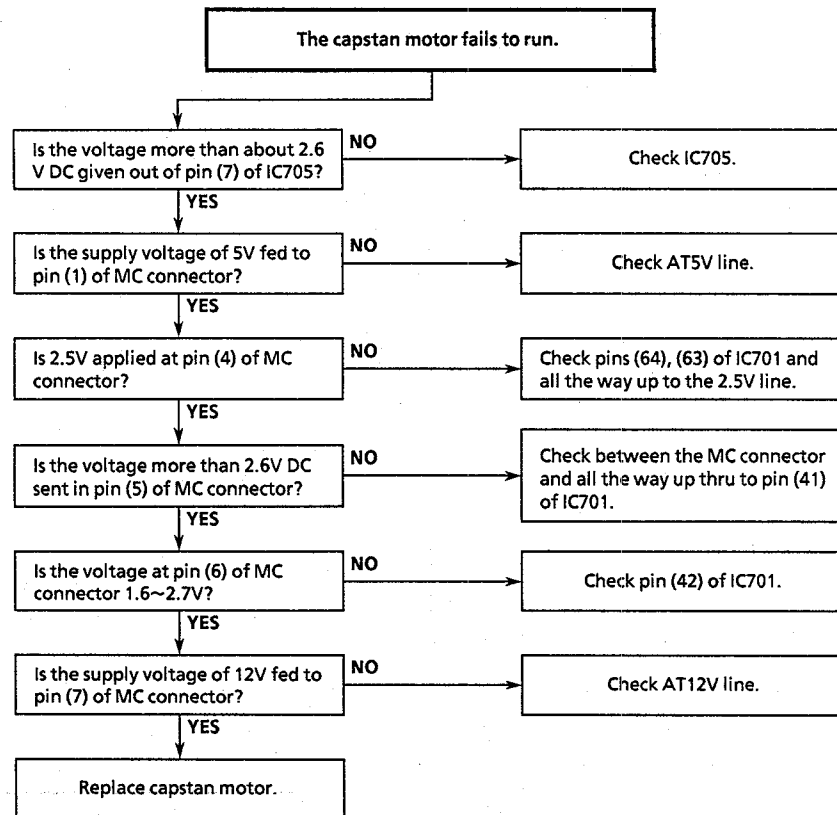
FLOW CHART NO.10 LOADING MOTOR AND EJECT TROUBLESHOOTING



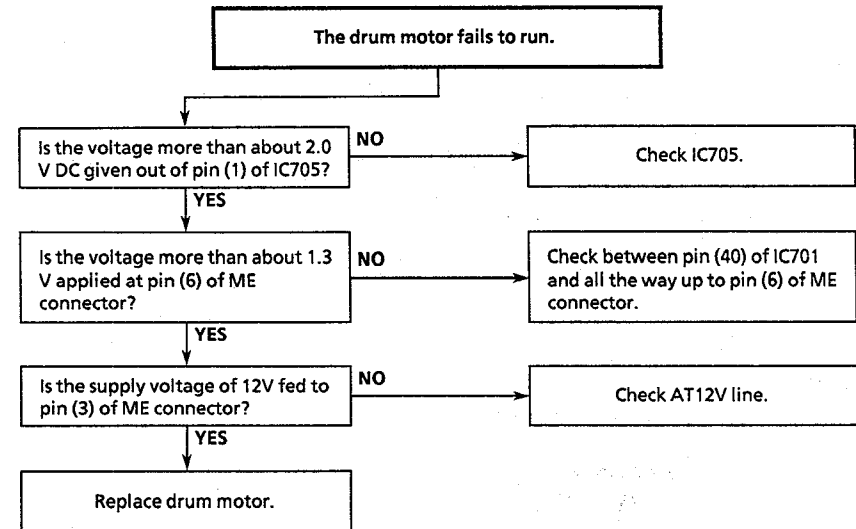
FLOW CHART NO.11 SYSTEM CONTROL TROUBLESHOOTING



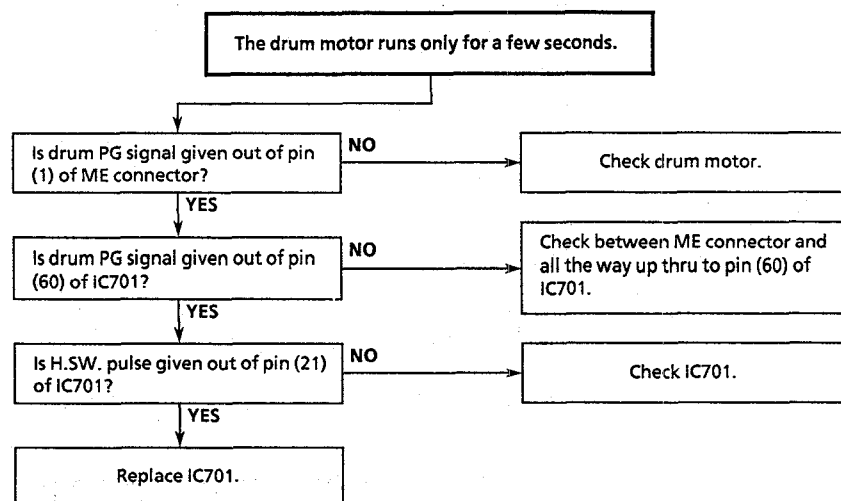
FLOW CHART NO.12 CAPSTAN MOTOR TROUBLESHOOTING



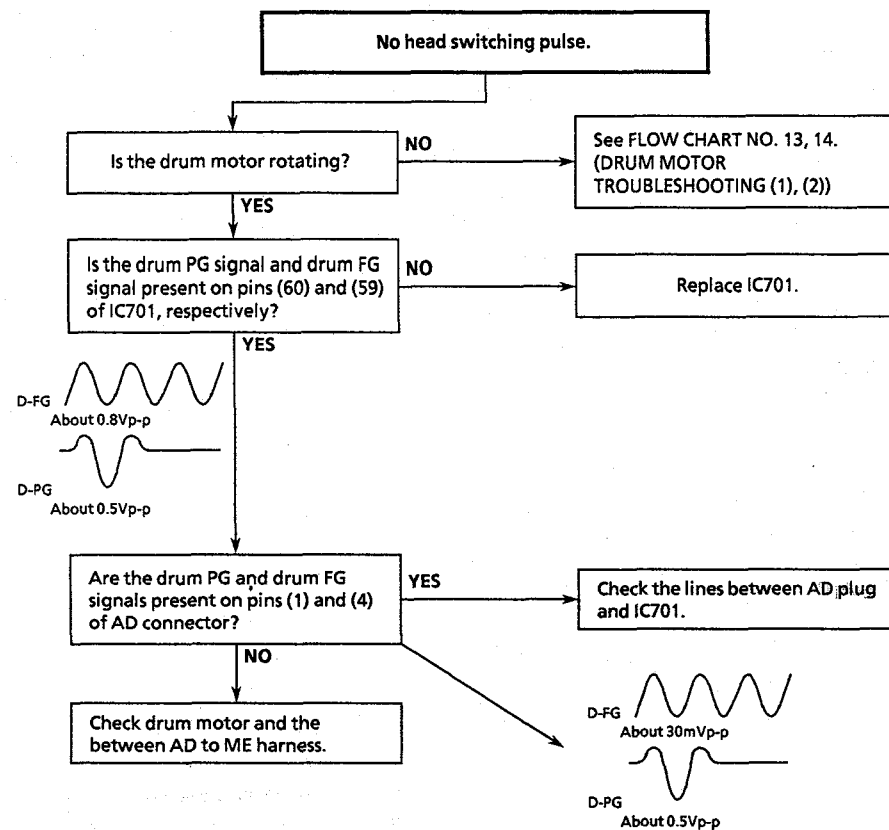
FLOW CHART NO.13 DRUM MOTOR TROUBLESHOOTING (1)



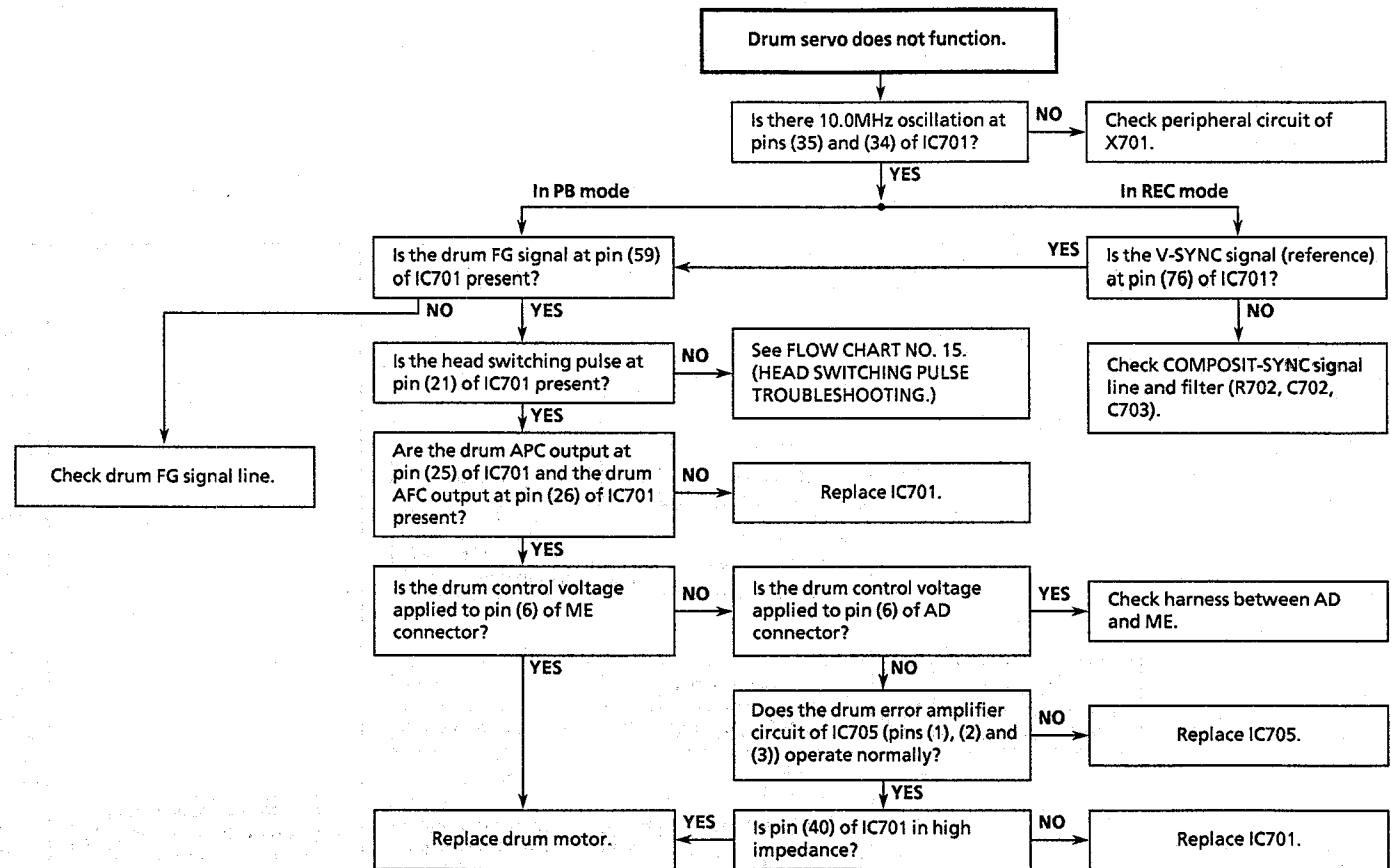
FLOW CHART NO.14 DRUM MOTOR TROUBLESHOOTING (2)



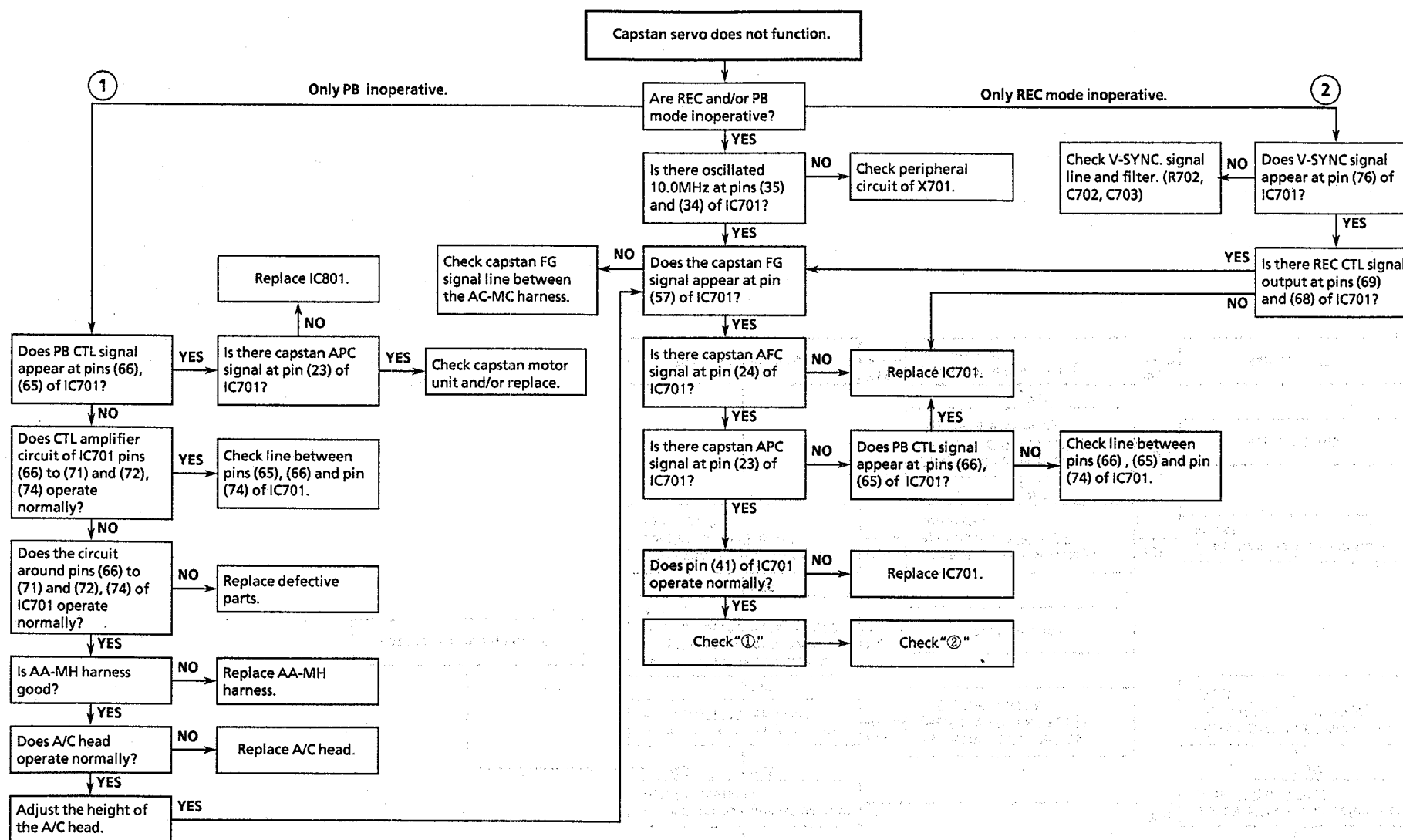
FLOW CHART NO.15 HEAD SWITCHING PULSE TROUBLESHOOTING



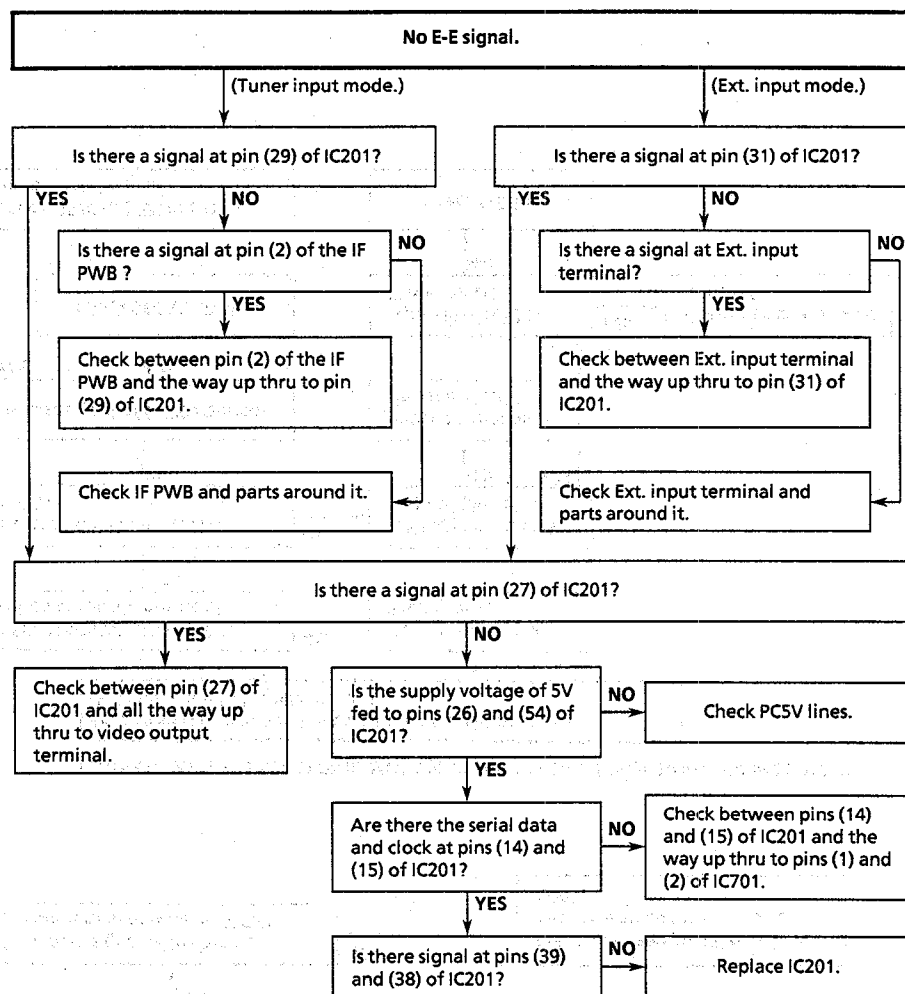
FLOW CHART NO.16 DRUM SERVO TROUBLESHOOTING



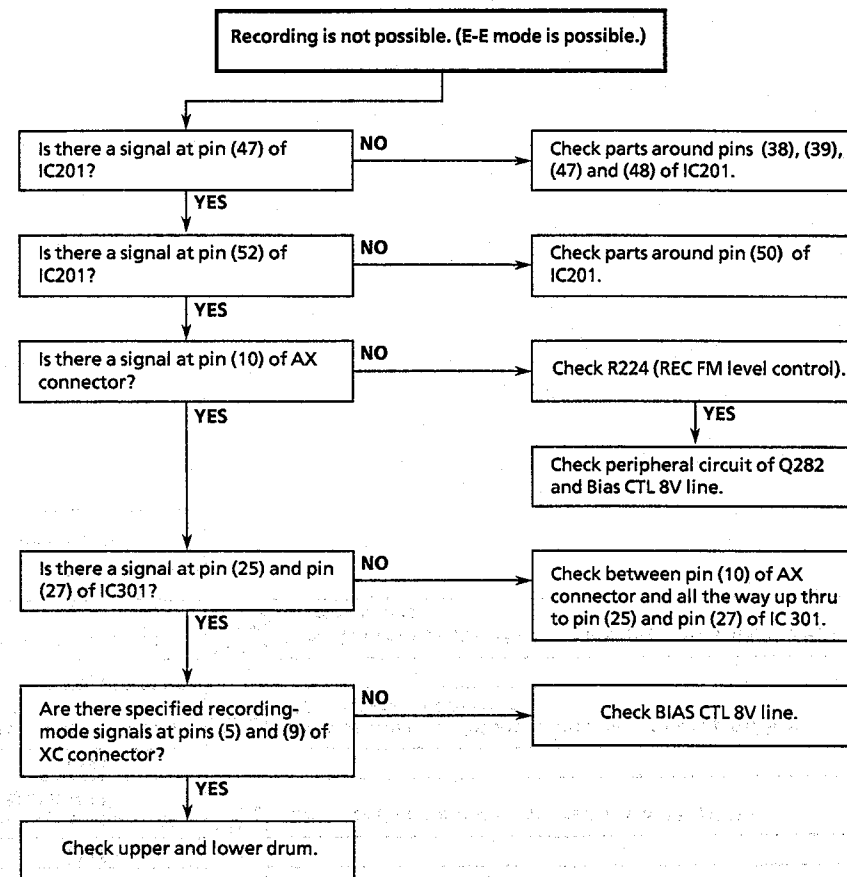
FLOW CHART NO.17 CAPSTAN SERVO TROUBLESHOOTING



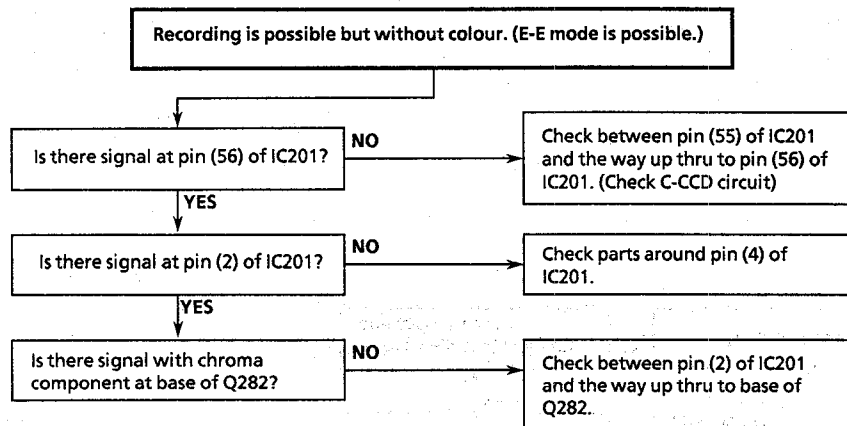
FLOW CHART NO.18 E-E MODE TROUBLESHOOTING



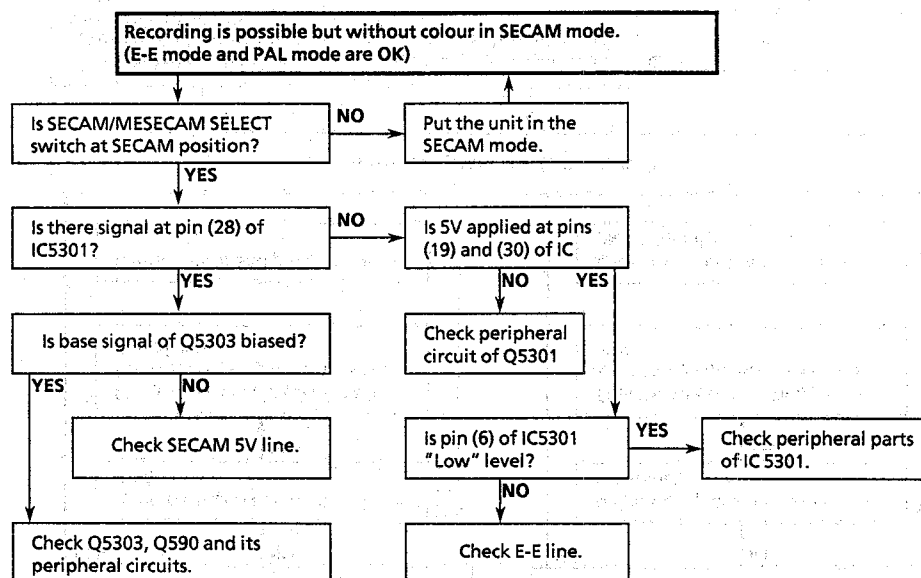
FLOW CHART NO.19 RECORDING MODE (LUMINANCE) TROUBLESHOOTING



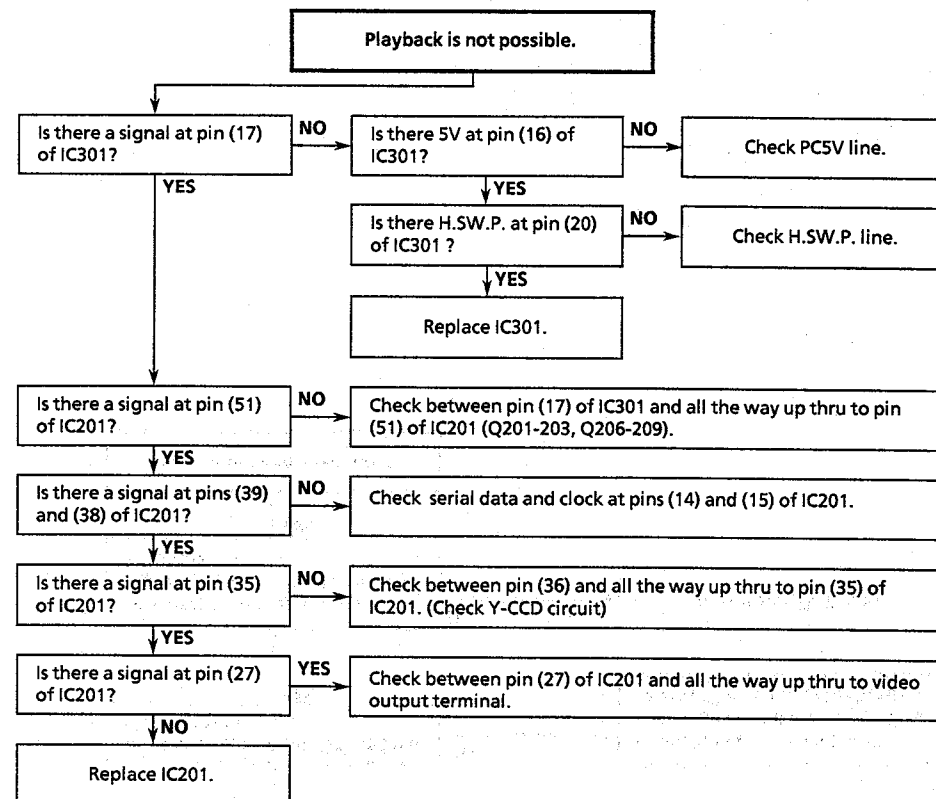
FLOW CHART NO.20 RECORDING MODE (CHROMA) TROUBLESHOOTING



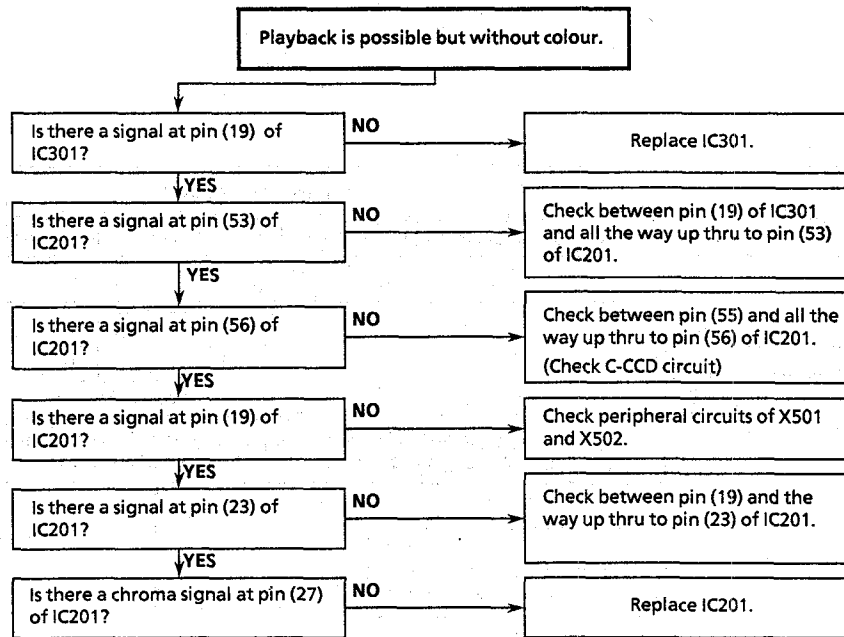
FLOW CHART NO.21 RECORDING MODE (CHROMA) TROUBLESHOOTING (VC-MH80 ONLY)



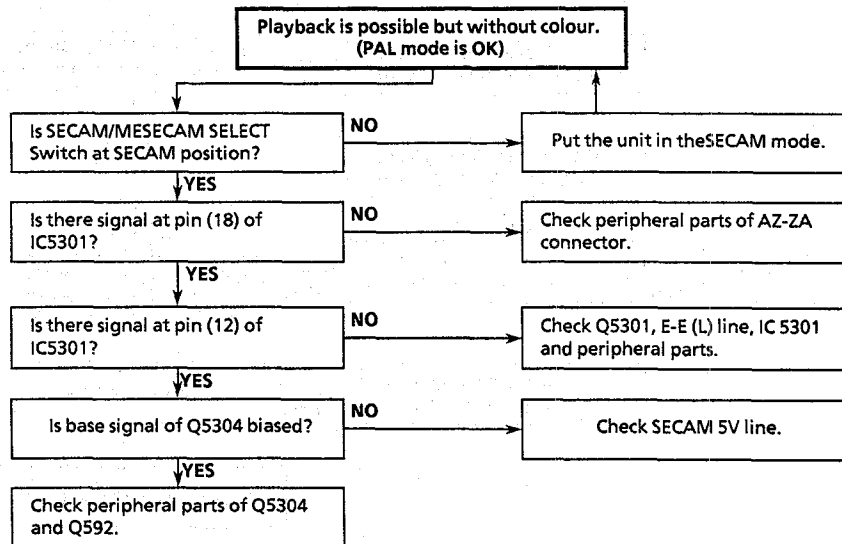
FLOW CHART NO.22 PLAYBACK MODE (LUMINANCE) TROUBLESHOOTING



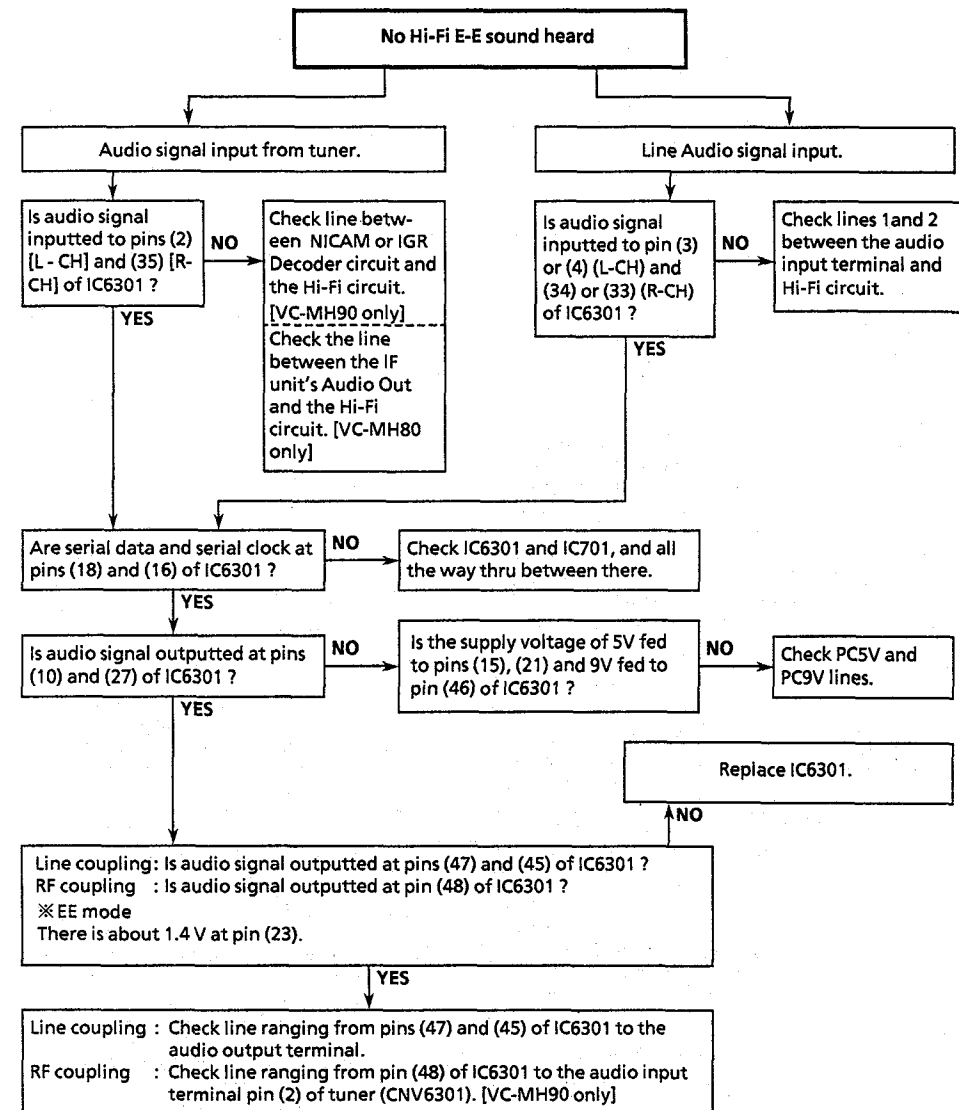
FLOW CHART NO.23 PLAYBACK MODE (CHROMA) TROUBLESHOOTING



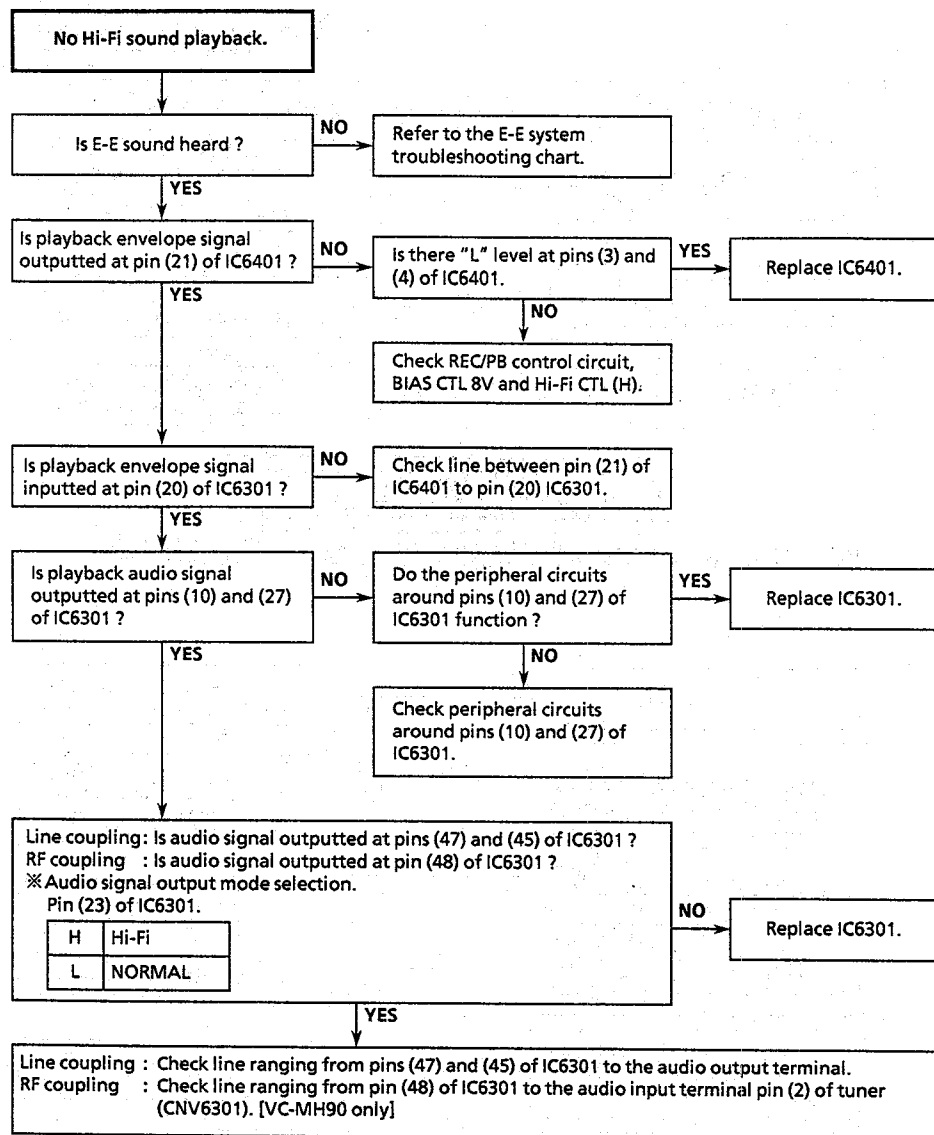
FLOW CHART NO.24 PLAYBACK MODE (CHROMA) TROUBLESHOOTING (VC-MH80 ONLY)



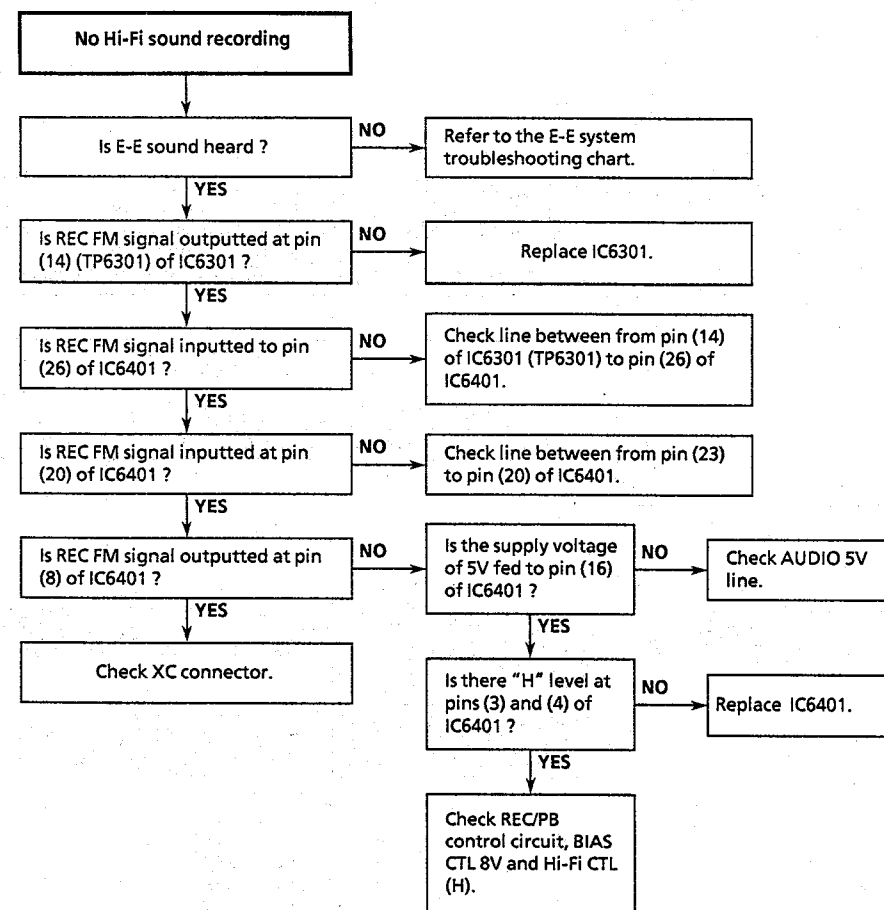
FLOW CHART NO.25 HI-FI TROUBLESHOOTING (1)



FLOW CHART NO.26 HI-FI TROUBLESHOOTING (2)



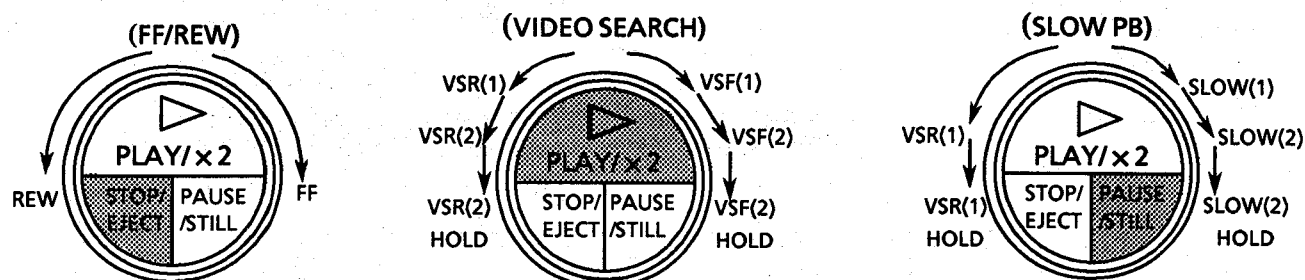
FLOW CHART NO.27 HI-FI TROUBLESHOOTING (3)



DESCRIPTION OF SHUTTLE FUNCTION

1. Description of operation.

The shuttle system is designed to control the basic modes of the VCR with the use of shuttle ring.



Fast Forward and Rewind

(Unit)

Stop the PB mode. Turn the ring clockwise or counterclockwise and release it (the shuttle ring returns to the center point), and the unit will be in the FF or REW mode.

(Remote controller)

Stop the PB mode and press the FF or REW button.

Video Search

(Unit)

During playback, turn the ring clockwise or counterclockwise and hold it, and the unit will be in the VSF or VSR mode. The search speed is variable in two steps depending on the turning angle. Release the ring (the shuttle ring returns to the center point) and the unit will be back in the PB mode.

(Remote controller)

During playback, press the FF or REW button, and the unit will be in the VSF or VSR mode. Each time the button is pressed, the search speed changes in the order of (2) → (1) → (2).

Tape Speed

	VSF/VSR (1)	VSF/VSR (2)	SLOW (1)	SLOW (2)
PAL SP/LP	×3	×7	1/30	1/10
NTSC SP/LP	×3	×5	1/30	1/10
NTSC EP	×5	×15	1/30	1/10

Variable Slow Motion

(Unit)

During pause, turn the ring clockwise and hold it to go to the SLOW PB mode. The slow play speed is variable in two steps depending on the turning angle. Release the ring (the shuttle ring returns to the center point), and the unit will be back in the PAUSE mode. When the ring is turned all the way clockwise, the SLOW PB mode is held.

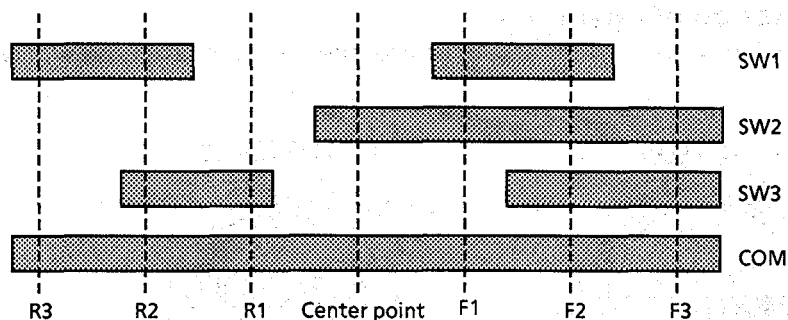
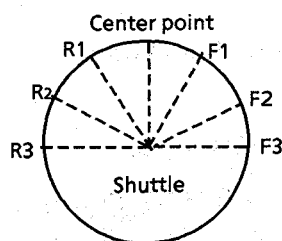
For returning to the usual play or pause, press the PB button or the PAUSE button.

During pause, turn the ring counterclockwise and hold it to go to the VSR mode. Release the ring, and the unit will be back in the PAUSE mode. When the ring is turned all the way counterclockwise, the VSR mode is held.

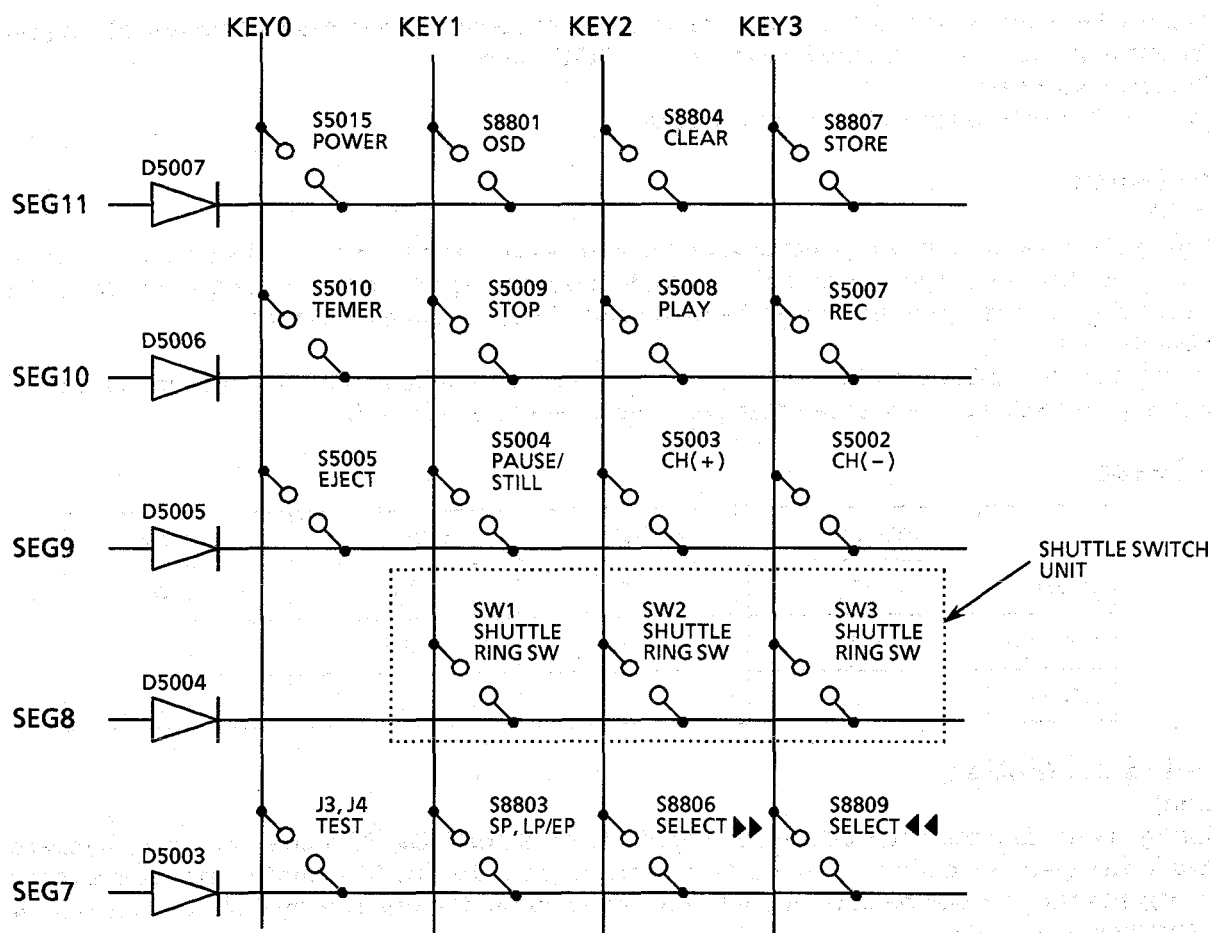
(Remote controller)

During play, pause, fast play or video search, press the SLOW button and the unit will be in the SLOW PB mode. The slow play speed can be changed between 1/30 and 1/10 using the SLOW buttons (+) and (-). If noises appear on the TV screen, make adjustment using the TRACK buttons (+) and (-). Press the PLAY/x2 button to resume the usual play.

2. Shuttle ring key matrix outline



	R3	R2	R1	Center point	F1	F2	F3
SW1	1	1	0	0	1	1	0
SW2	0	0	0	1	1	1	1
SW3	0	1	0	0	0	1	1



3. Shuttle control specifications

- 1) The FF and REW modes are continued with the ring at the center position.
- 2) The search and slow play speeds are as follows.

	VSF (1)/VSR (1)	VSF (2)/VSR (2)	SLOW (1)	SLOW (2)
PAL SP/LP	×3	×7	1/30	1/10
NTSC SP/LP	×3	×5	1/30	1/10
NTSC EP	×5	×15	1/30	1/10

※ The shuttle ring dose not click at the clockwise and counterclockwise ends. Being released at any point it returns to the center point.

3) Stop mode

Initial position	Set position						
	R3	R2	R1	Center point	F1	F2	F3
F3 (FF)	REW	REW	REW	FF Continued	FF	FF	—
F2 (FF)	REW	REW	REW	FF Continued	FF	—	FF
F1 (FF)	REW	REW	REW	FF Continued	—	FF	FF
Center point (STOP)	REW	REW	REW	—	FF	FF	FF
R1 (REW)	REW	REW	—	REW Continued	FF	FF	FF
R2 (REW)	REW	—	REW	REW Continued	FF	FF	FF
R3 (REW)	—	REW	REW	REW Continued	FF	FF	FF

4) Play Mode

Initial position	Set position						
	R3	R2	R1	Center point	F1	F2	F3
F3 (VSF2)	VSR2	VSR2	VSR1	VSF2 Continued	VSF2 Continued	VSF2 Continued	—
F2 (VSF2)	VSR2	VSR2	VSR1	PLAY Continued	VSF1	—	VSF2
F1 (VSF1)	VSR2	VSR2	VSR1	PLAY Continued	—	VSF2	VSF2
Center point (PLAY)	VSR2	VSR2	VSR1	—	VSF1	VSF2	VSF2
R1 (VSR1)	VSR2	VSR2	—	PLAY Continued	VSF1	VSF2	VSF2
R2 (VSR2)	VSR2	—	VSR1	PLAY Continued	VSF1	VSF2	VSF2
R3 (VSR2)	—	VSR2 Continued	VSR2 Continued	VSR2 Continued	VSF1	VSF2	VSF2

5) Still mode

Initial position	Set position						
	R3	R2	R1	Center point	F1	F2	F3
F3 (SLOW2)	VSR1	VSR1	VSR1	SLOW2 Continued	SLOW2 Continued	SLOW2 Continued	—
F2 (SLOW2)	VSR1	VSR1	VSR1	STILL Continued	SLOW1	—	SLOW2
F1 (SLOW1)	VSR1	VSR1	VSR1	STILL Continued	—	SLOW2	SLOW2
Center point (STILL)	VSR1	VSR1	VSR1	—	SLOW1	SLOW2	SLOW2
R1 (VSR1)	VSR1	VSR1	—	STILL Continued	SLOW1	SLOW2	SLOW2
R2 (VSR2)	VSR1	—	VSR1	STILL Continued	SLOW1	SLOW2	SLOW2
R3 (VSR2)	—	VSR1 Continued	VSR1 Continued	VSR1 Continued	SLOW1	SLOW2	SLOW2

- ※ When the ring is released from the F1 or F2 point, the unit back in the initial mode (PLAY or STILL) mode. When it is turned up to the F3 point and then released back to the center point, the unit continues the previous mode (F3 mode).
The FF and REW modes are continued when the ring has come from the F1, F2 or F3 point to the center point.

REPLACEMENT OF IC703 (E²PROM)

« Servicing precautions »

When the IC703 (E²PROM) has been replaced, make the following reprogramming.

Depending on models, the IC703 (E²PROM) has been factory adjusted for its memory function.

It's therefore necessary to reprogram the memory function for the model in question.

Note that the servo circuit requires readjustments for the HEAD SWITCHING POINT, SP/LP SLOW TRACKING PRESET and FV (False Vertical Sync) OF STILL PICTURE modes.

Memory function reprogramming.

1. Check the power off. (Power is standby mode)
2. Make for a moment short-circuit between test jumpers 3 and 4 located on the timer PWB.
Be sure that all the fluorescent display tubes light up into the TEST mode.
3. Using the CHANNEL (+) and (-) buttons, select the right function numbers from among JP0-JP31, which appear in the fluorescent display tube, referring to the E²PROM map.
Press the DISPLAY button to pick up the functions (ON) and the CLEAR button to discard the functions (OFF).
DISPLAY and CLEAR buttons are located on the remote control unit.
 - * When the DISPLAY button has been pressed (ON), the memory function No. starts flashing.
 - * When the CLEAR button has been pressed (OFF), the memory function No. lights up
4. Finally make for moment short-circuit between test jumpers 3 and 4 located on the timer PWB to clear the TEST mode.

	No.	FUNCTION	MH200	MH200E	MH170D	MH170B	MH90	MH80	MH190B
S Y S C O N	JP31	NOP	0	0	0	0	0	0	0
	30	NOP	0	0	0	0	0	0	0
	29	NOP	0	0	0	0	0	0	0
	28	NOP	0	0	0	0	0	0	0
	27	VISS AD/E	1	1	1	1	1	1	1
	26	NTSC SKEW	0	0	0	0	0	0	0
	25	HEAD1	0	0	0	0	1	1	0
	24	HEAD0	1	1	1	1	0	0	1
T I M E R	23	SIMUL	1	1	1	1	1	1	1
	22	R/C CODE	1	1	0	0	0	0	0
	21	SYSTEM 1	1	1	1	0	1	1	0
	20	SYSTEM 0	1	1	0	1	1	1	1
	19	Hi-Fi	1	1	1	1	1	1	1
	18	NICAM	1	1	0	0	1	0	1
	17	G-CODE1	0	0	0	0	0	0	0
	16	G-CODE0	1	1	0	0	0	0	0
	15	0:00	1	1	1	1	1	1	1
	14	LP/EP	1	1	1	1	1	1	1
	13	NOP	0	0	0	0	0	0	0
	12	SHUTTLE	1	1	1	1	1	1	1
	11	LINE2	1	1	0	0	1	1	0
	10	CATV	0	0	0	0	0	0	0
	9	NICAM I	1	0	0	0	1	0	0
	8	TUNER 0	0	0	0	0	0	0	0
	7	DECODER	0	0	0	0	0	0	0
	6	SYSTEM-I	0	0	0	0	0	0	0
	5	VCR 1	0	0	0	0	0	0	0
	4	TV/VCR	0	0	0	0	0	0	0
	3	PDC	0	0	0	0	0	0	0
	2	VPS	0	0	0	0	0	0	0
	1	COLOUR 1	0	0	0	0	0	0	0
	0	COLOUR 0	0	0	0	0	0	0	0

VC-MH80
VC-MH90

MEMO

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

VC-MH80
VC-MH90

VC-MH80
VC-MH90

SIGNAL FLOW BLOCK DIAGRAM

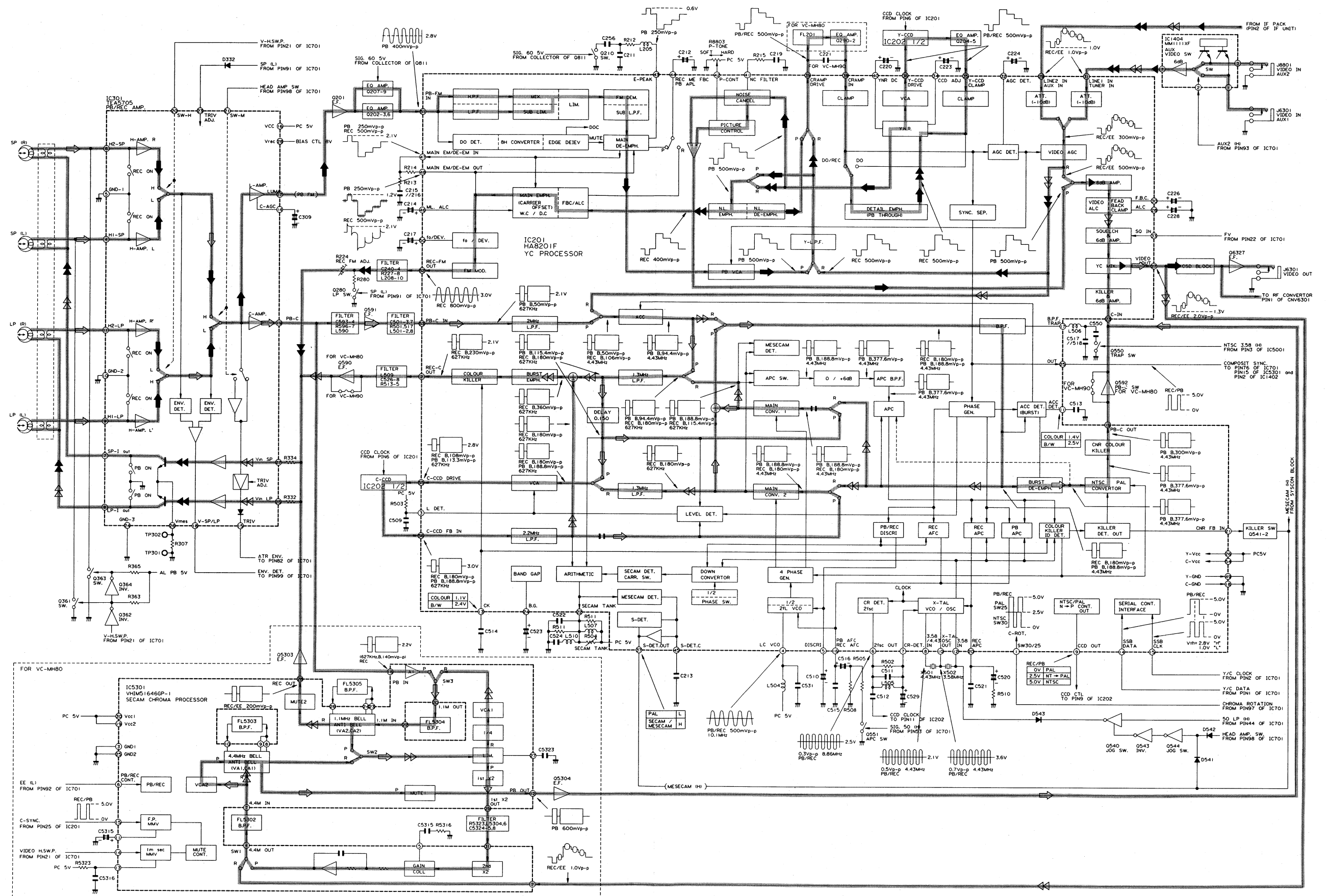
▶ Playback Chrominance Signal

▶▶ Recording Chrominance Signal

▶ E-E Signal

▶▶ Playback Luminance Signal

▶▶▶ Recording Luminance Signal

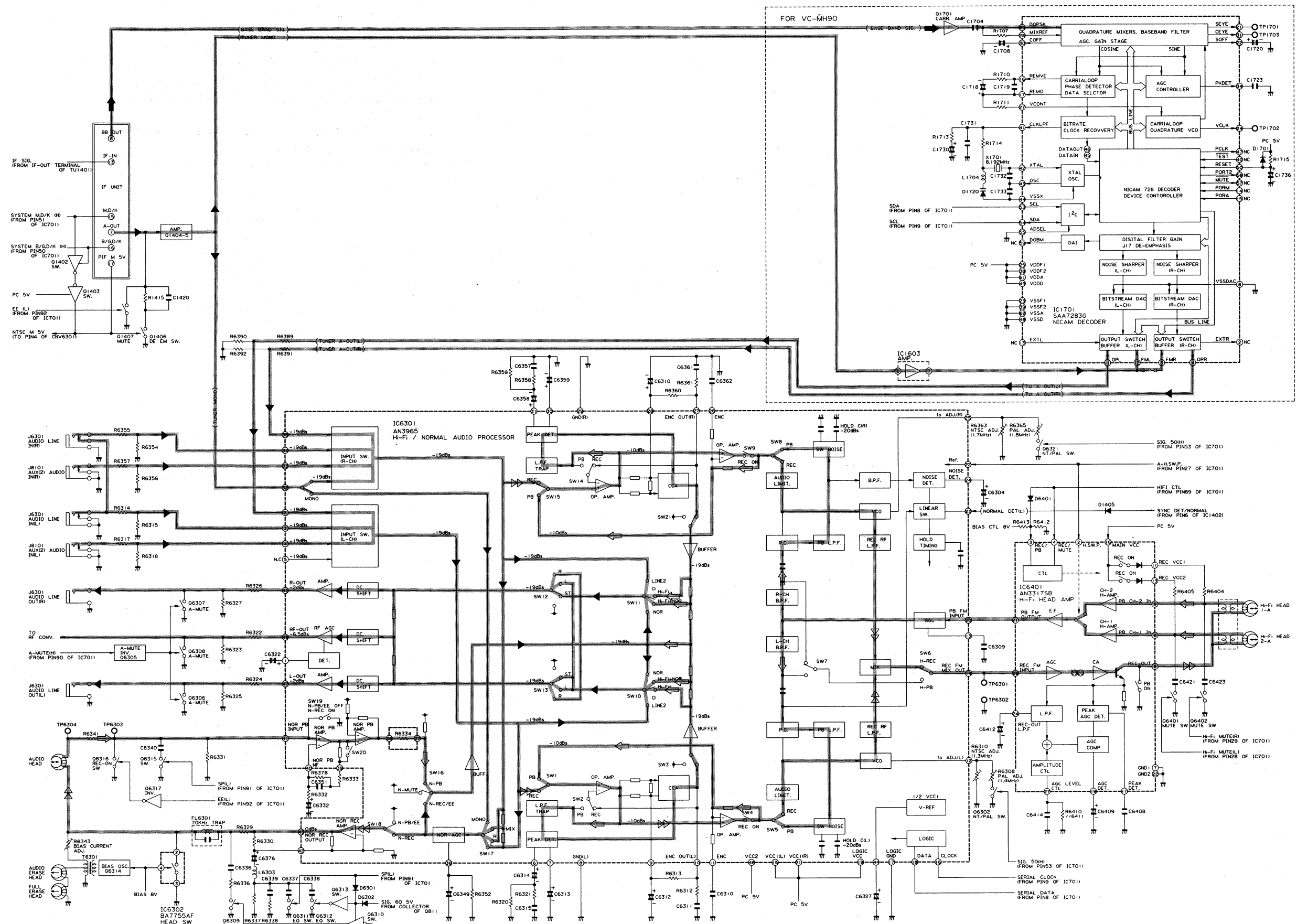


VC-MH80
VC-MH90

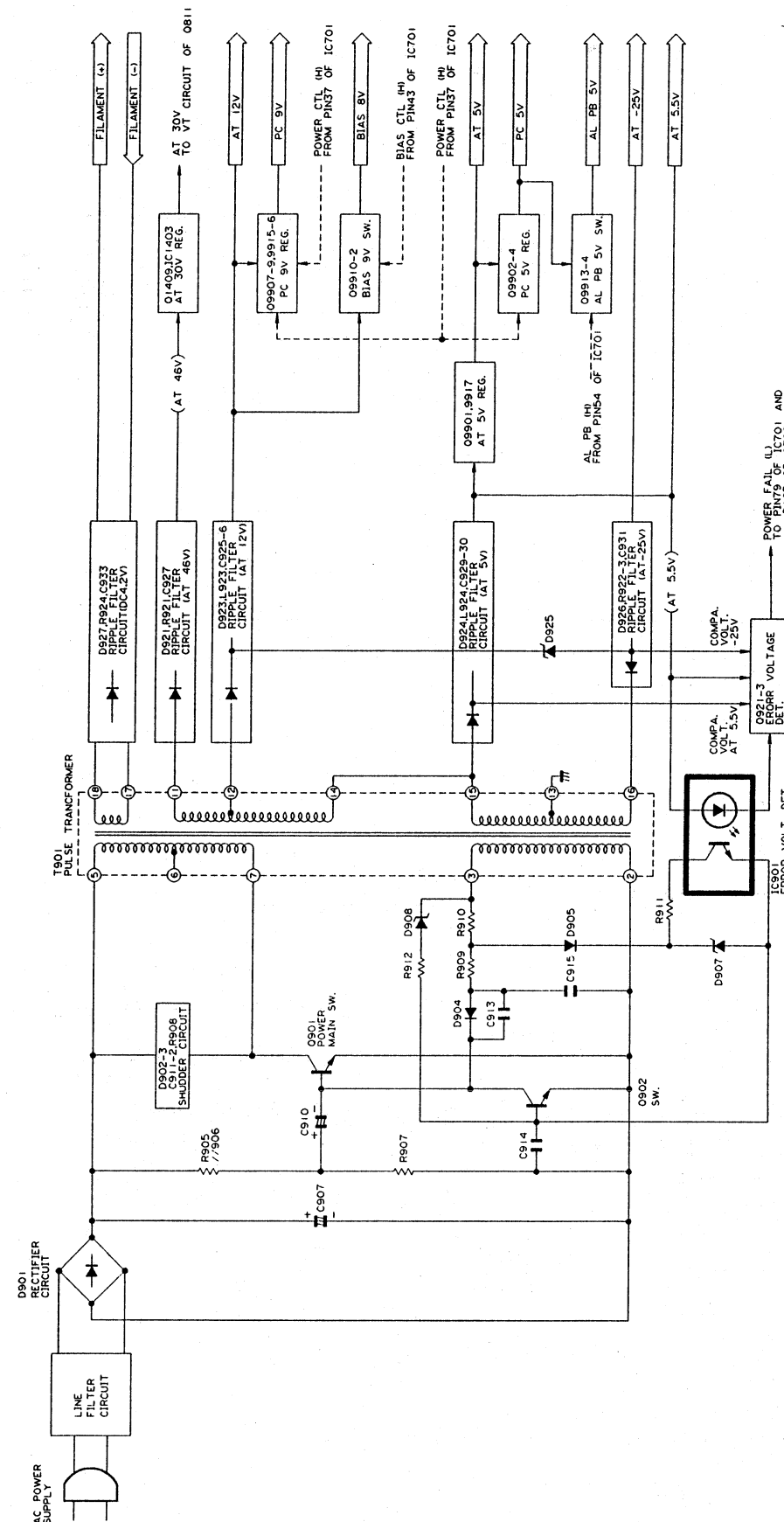
VC-MH80
VC-MH90

AUDIO BLOCK DIAGRAM

⇒ Playback Signal ⇨ Recording Signal ▶ E-E Signal
➡ Base Band Signal



POWER CIRCUIT BLOCK DIAGRAM



SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
BE SURE TO USE GENUINE PARTS FOR SECURING THE SAFETY AND RELIABILITY OF THE SET. PARTS MARKED WITH "△" AND PARTS SHADED (IN BLACK) ARE ESPECIALLY IMPORTANT FOR MAINTAINING THE SAFETY AND PROTECTING ABILITY OF THE SET.
BE SURE TO REPLACE THEM WITH PARTS OF SPECIFIED PART NUMBER.

SAFETY NOTES:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

NOTES:

1. The unit of resistance "ohm" is omitted ($k = 1000 \text{ ohm}$, $M = 1 \text{ Meg ohm}$).
2. All resistors are $1/8$ watt, unless otherwise noted.
3. The unit of capacitance "F" is omitted ($\mu = \mu F$, $p = \mu\mu F$).
4. The values in parentheses are the ones in the PB mode; the values without parentheses are the ones in the REC mode.

VOLTAGE MEASUREMENT CONDITIONS:

1. DC voltages are measured between points indicated and chassis ground by VTVM, with AC110-240V, 50/60Hz supplied to unit and all controls are set to normal viewing picture unless otherwise noted.
2. Voltages are measured with 10000 μ V B & W or colour signal.

WAVEFORM MEASUREMENT CONDITIONS:

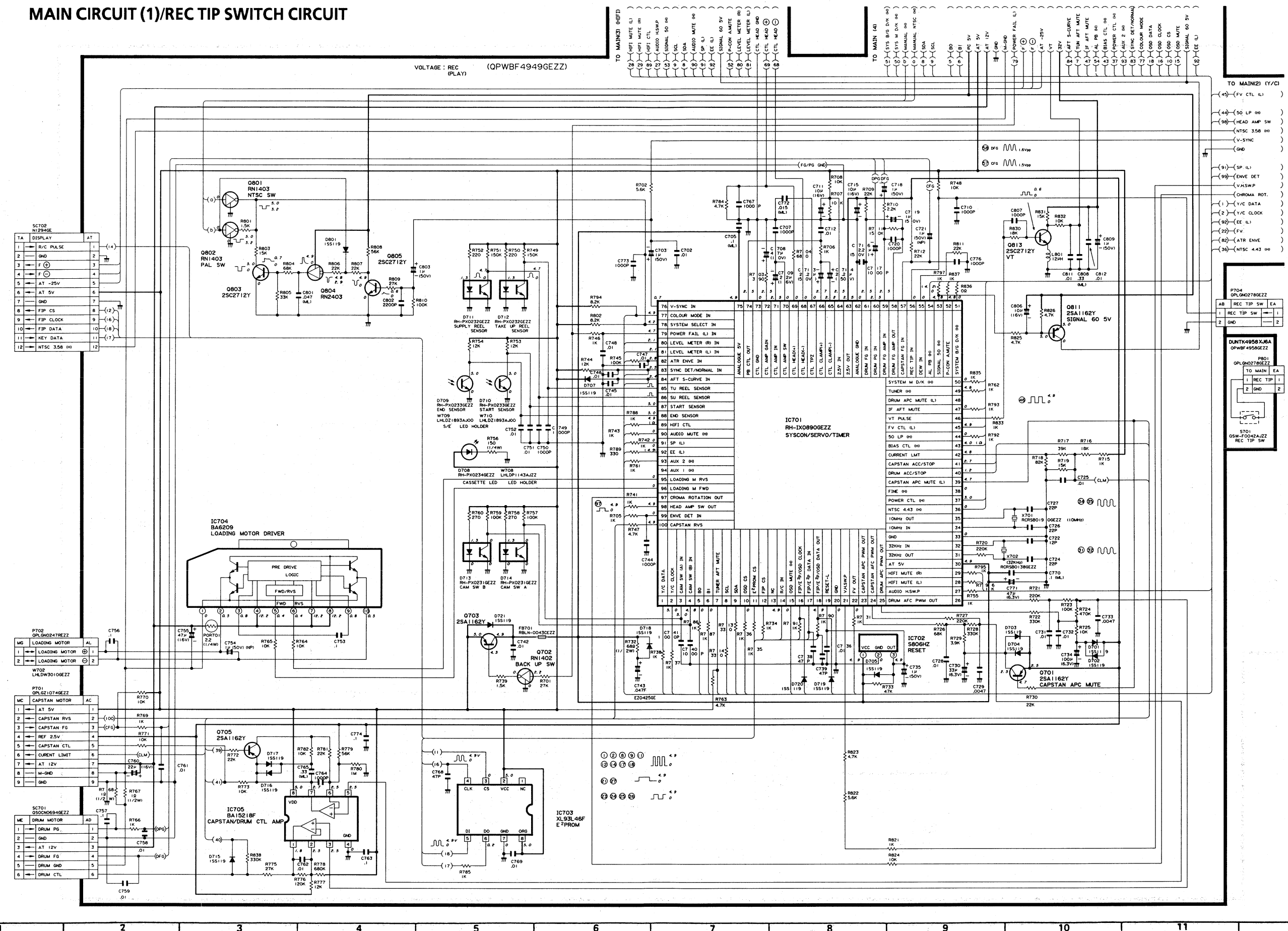
10000 μ V 87.5 percent modulated colour bar signal is fed into tuner.

CAUTION:

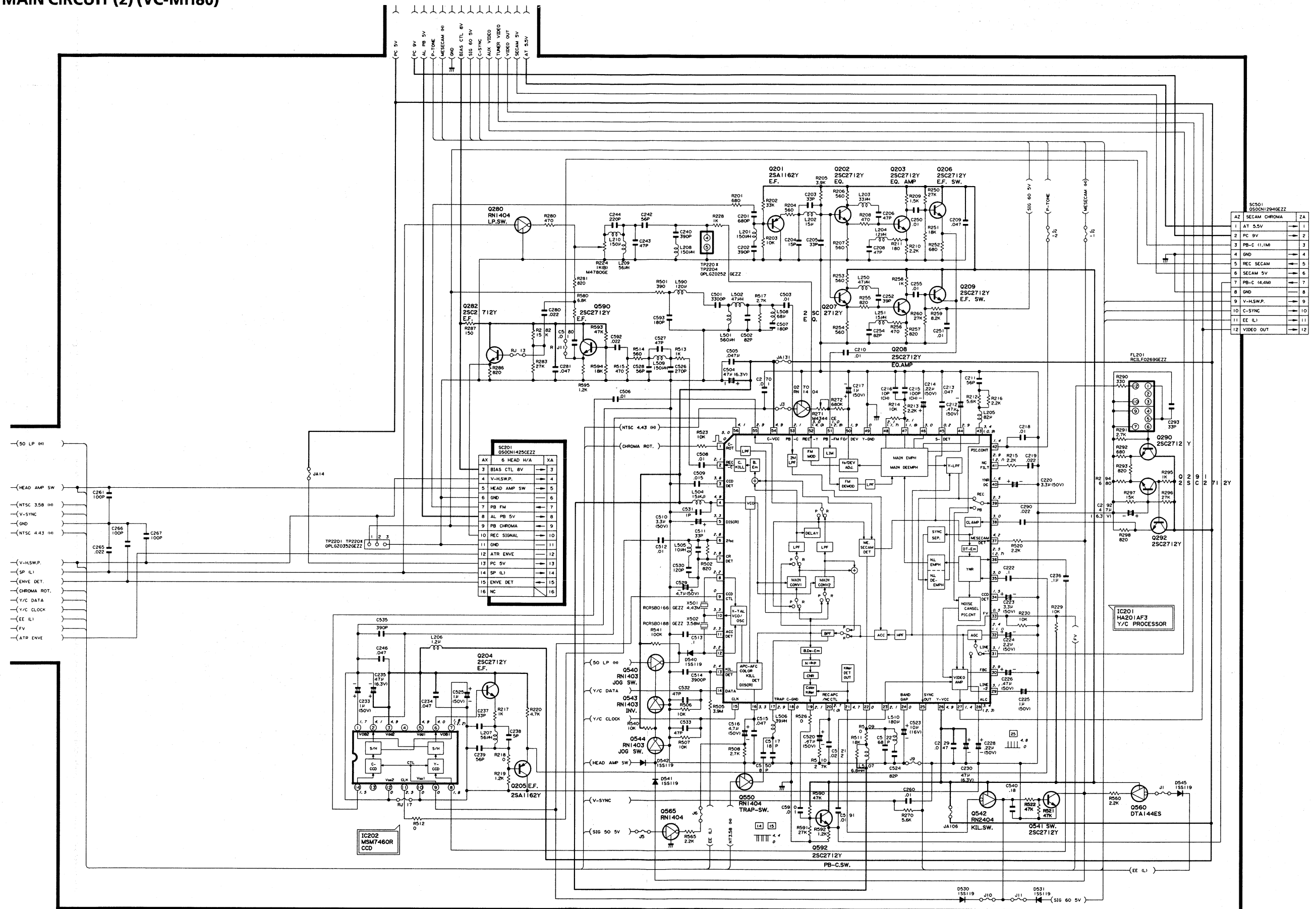
This circuit diagram is original one. Therefore there may be a slight difference from yours.

9. CIRCUIT DIAGRAM AND PWB FOIL PATTERN

MAIN CIRCUIT (1)/REC TIP SWITCH CIRCUIT



REC Without Parentheses

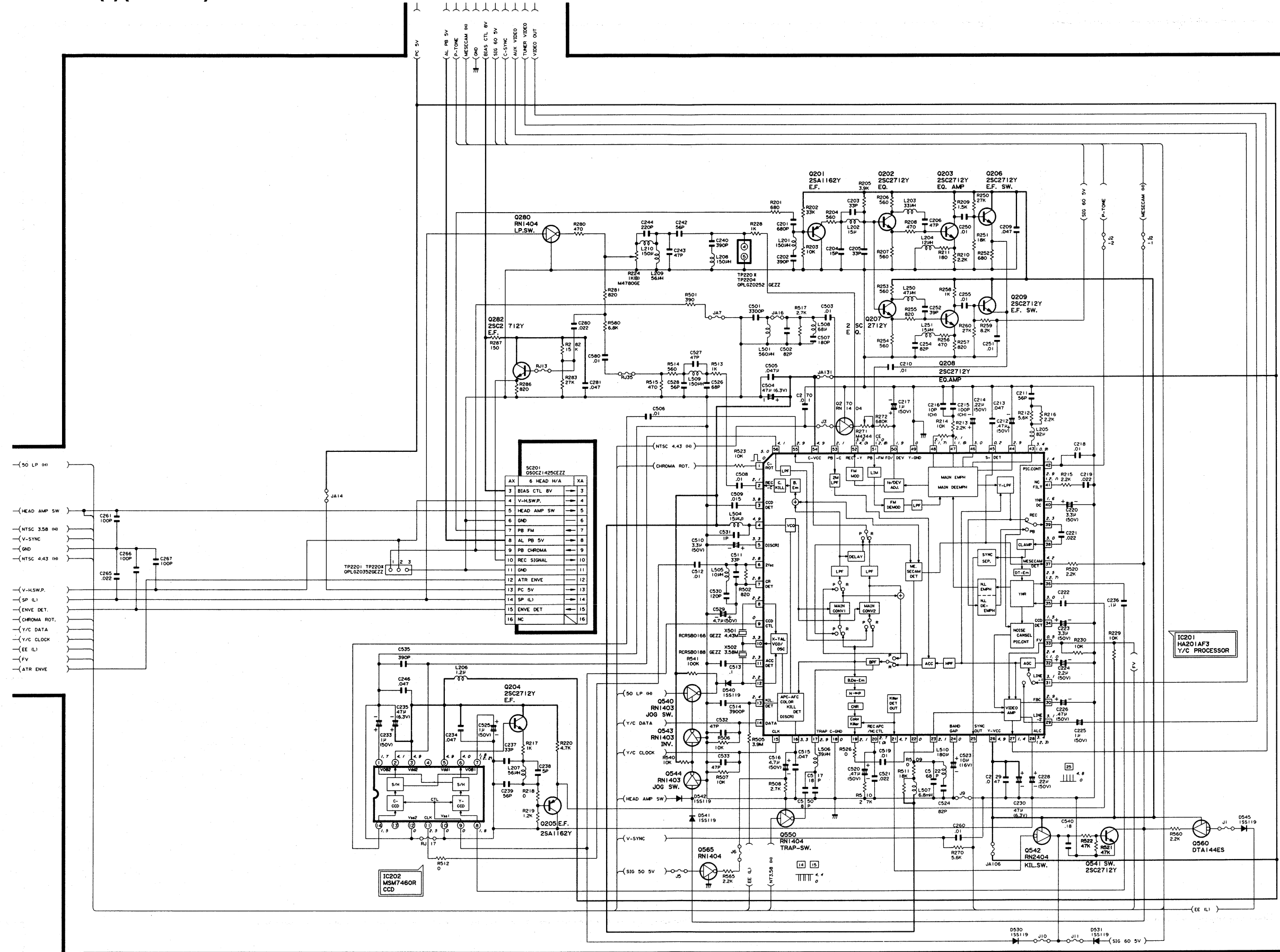


PB Parentheses ()
REC Without Parentheses

VC-MH80
VC-MH90

VC-MH80
VC-MH90

MAIN CIRCUIT (2) (VC-MH90)



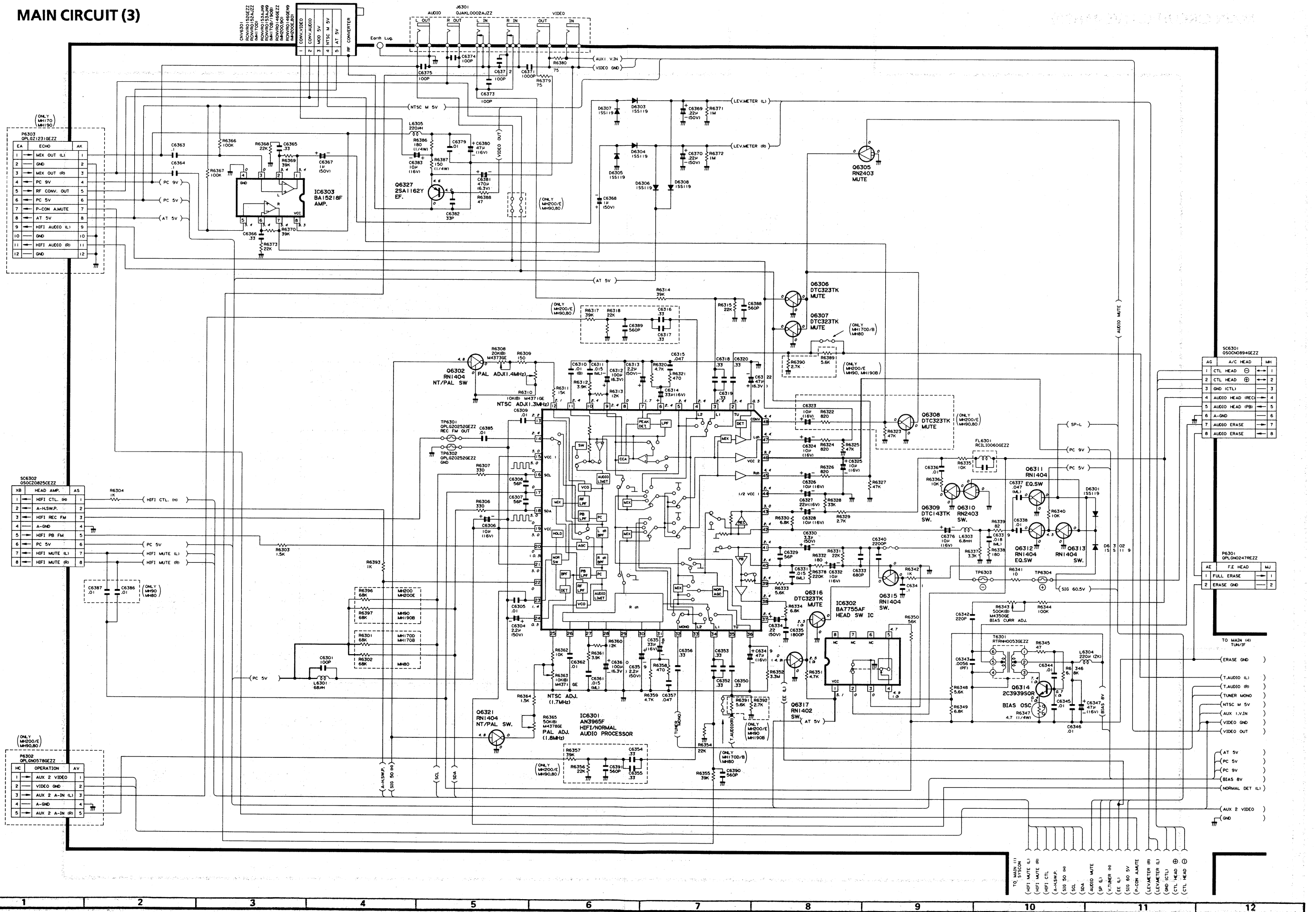
* VOLTAGE MEASUREMENT MODE

PB Parentheses ()
REC Without Parentheses

VC-MH80
VC-MH90

VC-MH80
VC-MH90

MAIN CIRCUIT (3)



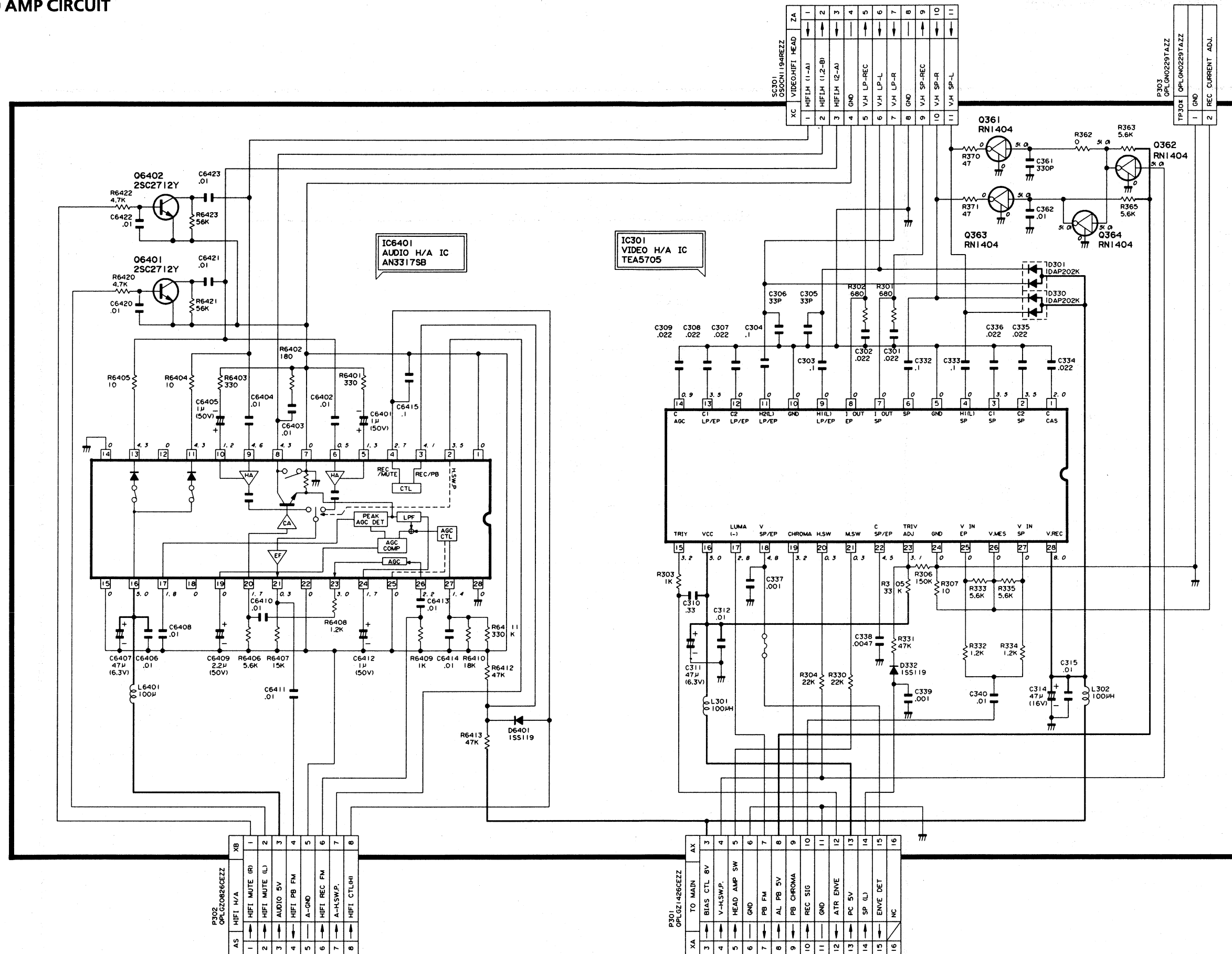
* VOLTAGE MEASUREMENT MODE

PB Parentheses ()

REC Without Parentheses

PB Parentheses ()
REC Without Parentheses

HEAD AMP CIRCUIT



* VOLTAGE MEASUREMENT MODE

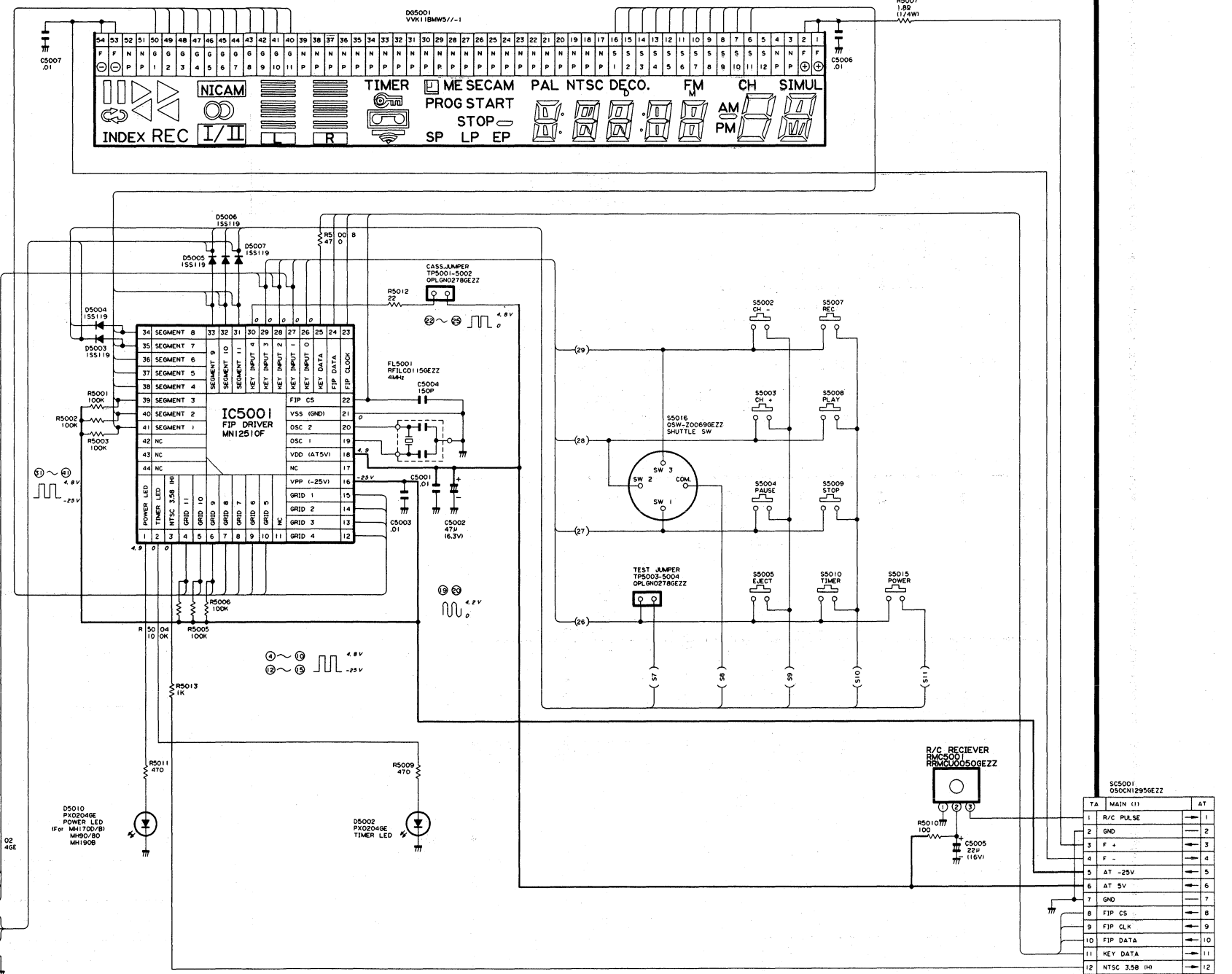
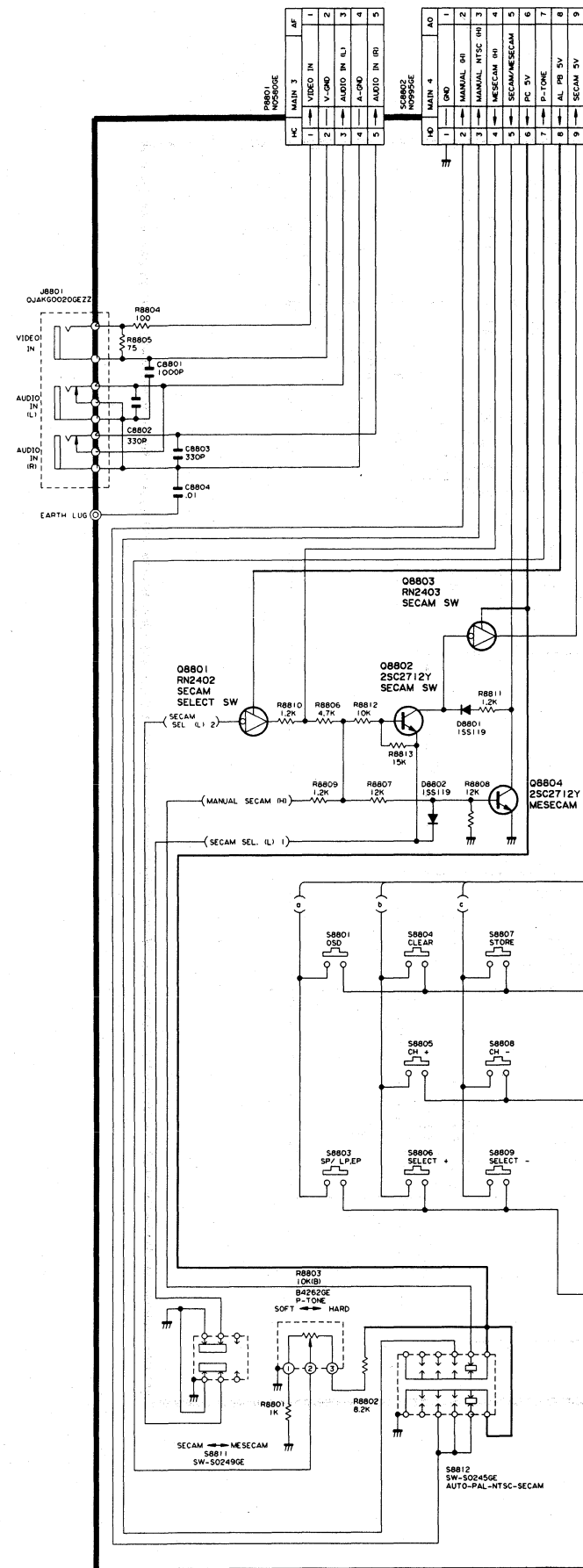
PB Parentheses ()

REC Without Parentheses

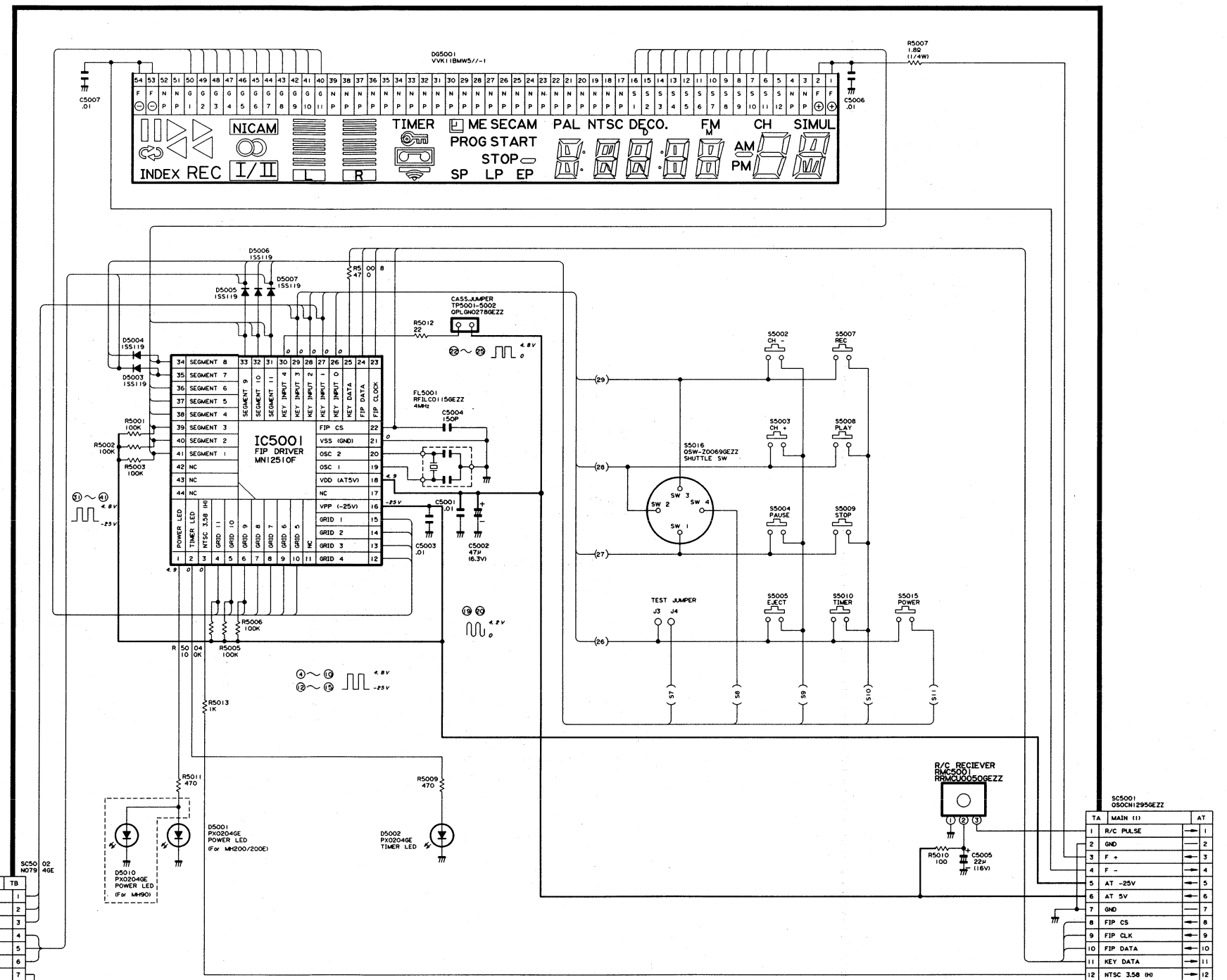
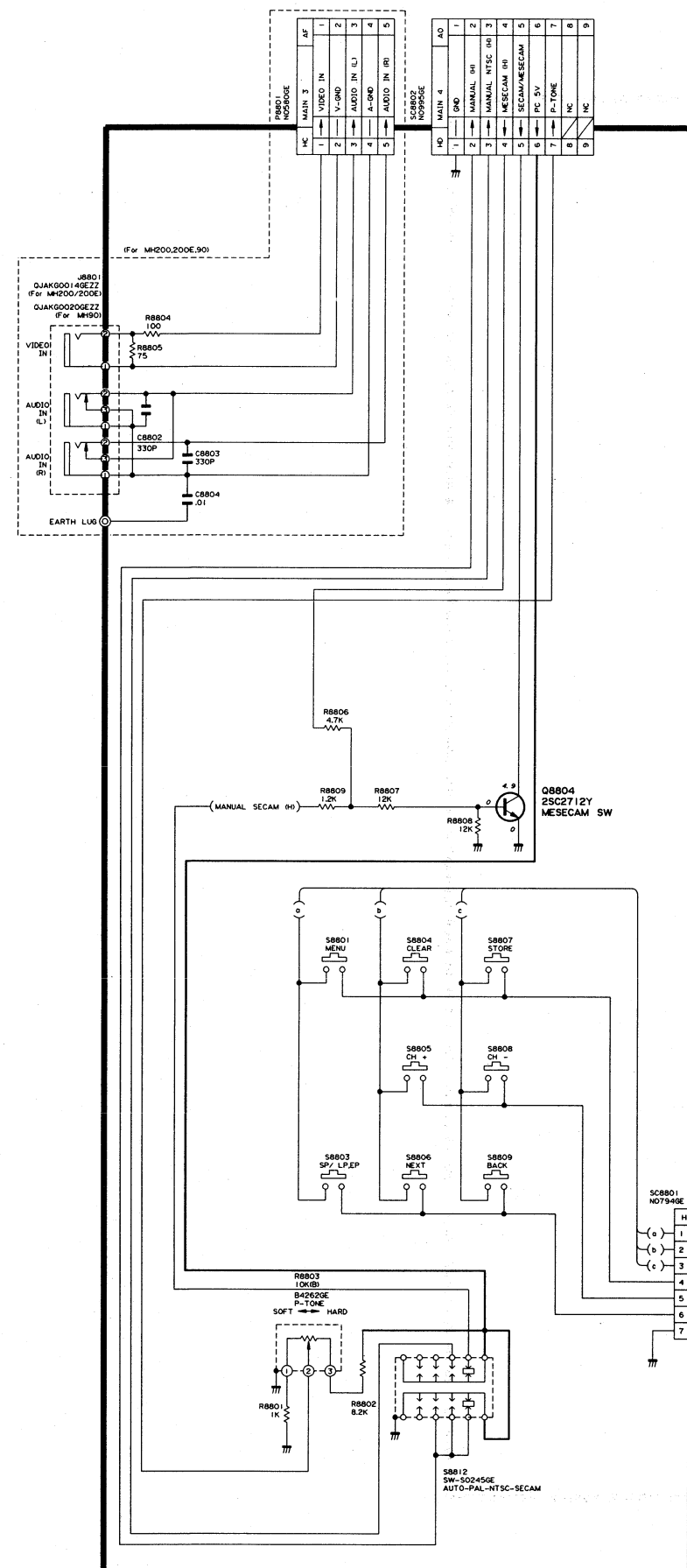
VC-MH80
VC-MH90

VC-MH80
VC-MH90

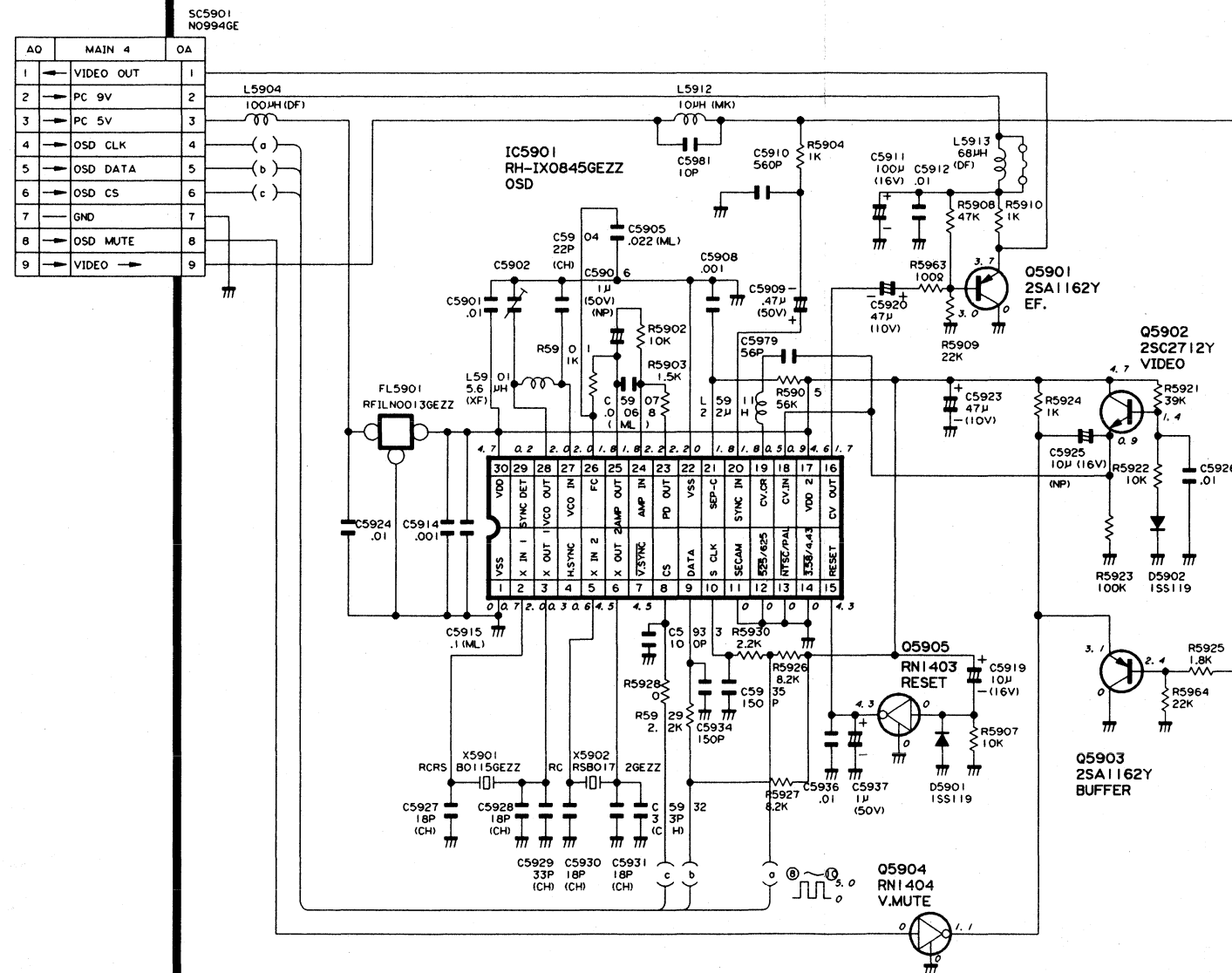
OPERATION/TIMER CIRCUIT (VC-MH80)



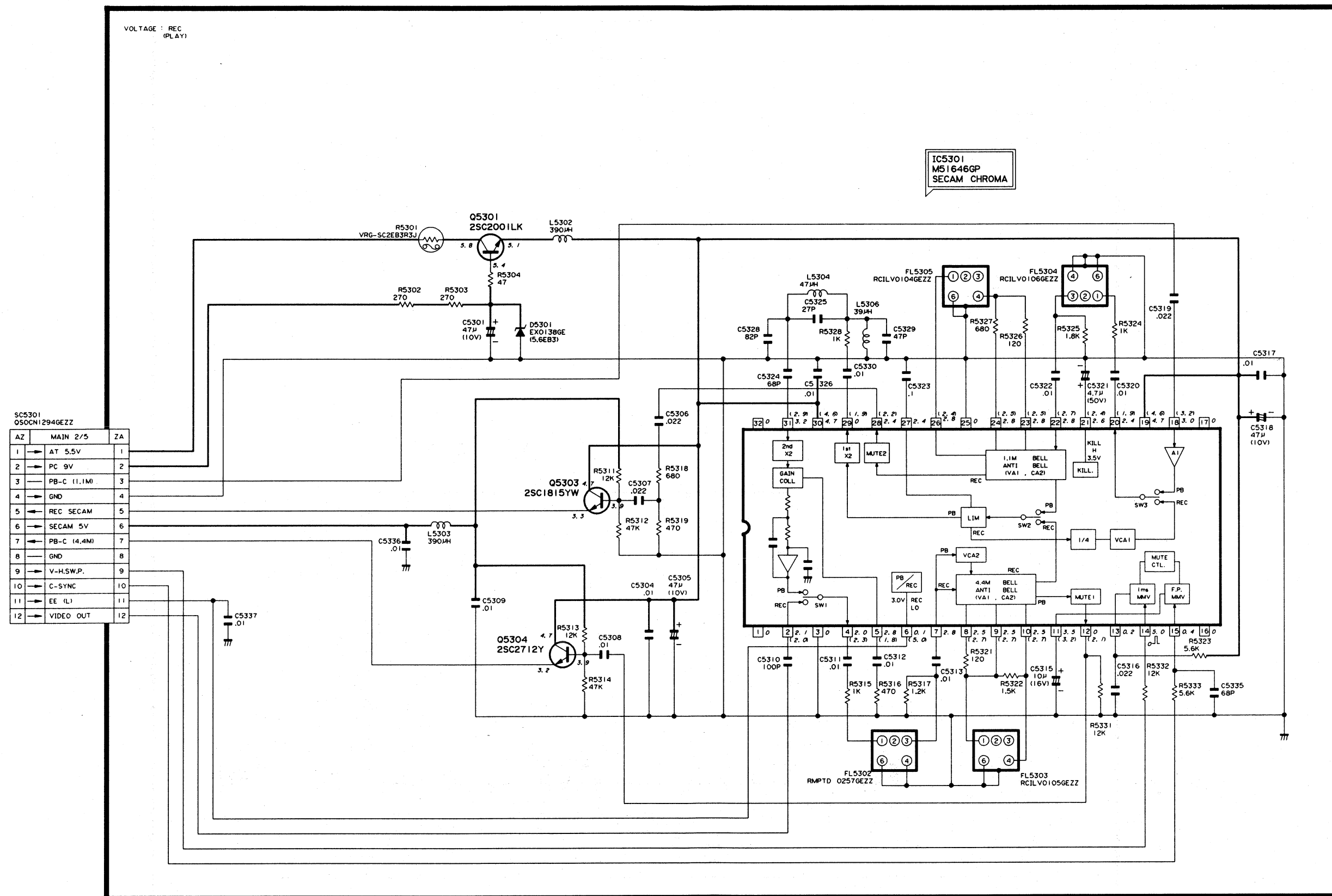
OPERATION/TIMER CIRCUIT (VC-MH90)



OSD CIRCUIT



SECAM CHROMA CIRCUIT (VC-MH80)

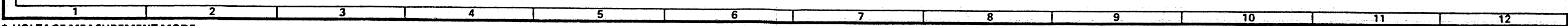


* VOLTAGE MEASUREMENT MODE

PB Parentheses ()

REC Without Parentheses

A
B
C
D
E
F
G
H

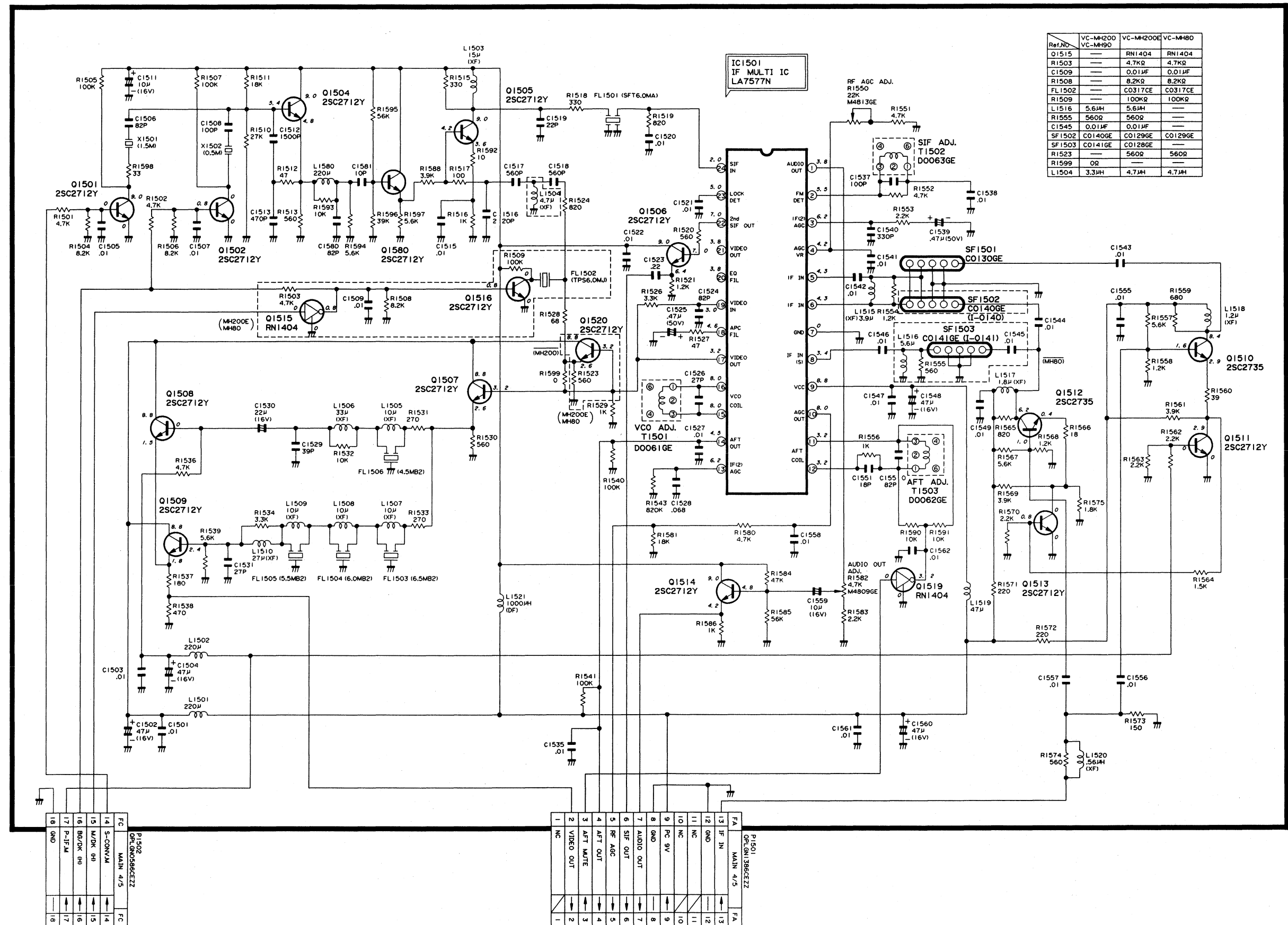


PB Parentheses ()
REC Without Parentheses

IF CIRCUIT

VC-MH80
VC-MH90

VC-MH80
VC-MH90



* VOLTAGE MEASUREMENT MODE

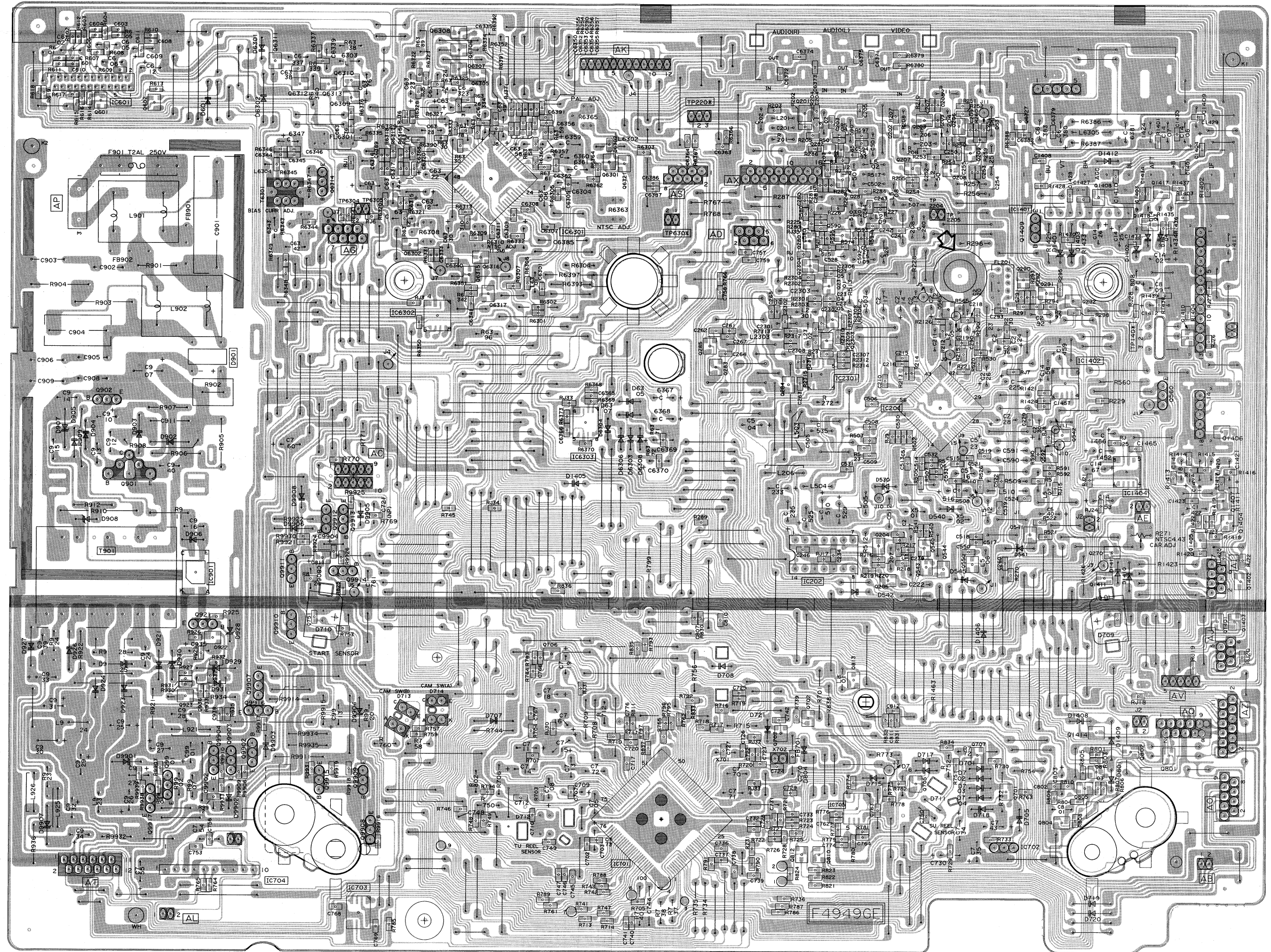
PB Parentheses ()

REC Without Parentheses

VC-MH80
VC-MH90

VC-MH80
VC-MH90

PWB FOIL PATTERN



MAIN PWB

VC-MH80
VC-MH90



10. REPLACEMENT PARTS LIST PARTS REPLACEMENT

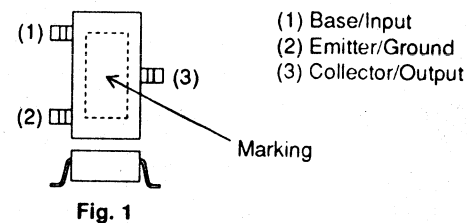
Many electrical and mechanical parts in video cassette recorder have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by Δ and shaded areas in the Replacement Parts Lists and Schematic Diagrams. The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |
| 5. PRICE CODE | |

HOW TO IDENTIFY CHIP TRANSISTORS AND DIODES BY ITS MARKING



Package	Marking	Parts No.
Fig. 1	JC	VS2SC2735///1E
Fig. 1	SY	VS2SA1162Y/-1
Fig. 1	LY	VS2SC2712Y/-1
Fig. 1	YC	VSRN2403///-1
Fig. 1	XC	VSRN1403///-1
Fig. 1	XD	VSRN1404///-1
Fig. 1	YD	VSRN2404///-1
Fig. 1	XB	VSRN1402///-1
Fig. 1	25	VSDTC124EK/-1

MARK \star : SPARE PARTS-DELIVERY SECTION.

Ref. No.	Part No.	\star	Description	Code
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PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)

DUNTK4949KE55	-	Main Unit (VC-MH80)	—
DUNTK4949KE54	-	Main Unit (VC-MH90)	—
DUNTK4950KE53	-	Timer Unit	—

VC-MH80
VC-MH90

Ref. No.	Part No.	\star	Description	Code
	DUNTK4951KE52	-	Operation Unit (VC-MH80)	—
	DUNTK4951KE51	-	Operation Unit (VC-MH90)	—
	DUNTK4956KE53	-	OSD/SECAM-C Unit (VC-MH80)	—
	DUNTK4956KE50	-	OSD/MPX Unit (VC-MH90)	—
	DUNTK4957KE52	-	IF Unit (VC-MH80)	—
	DUNTK4957KE50	-	IF Unit (VC-MH90)	—
	DUNTK4958KE50	-	REC Tip Unit	—
	DUNTK4998KE50	-	Head Amp Unit	—

DUNTK4949KE55 (VC-MH80) DUNTK4949KE54 (VC-MH90) MAIN UNIT

TUNER AND ASSEMBLY

CNV6301	CNVR0146GEN9	J	RF Converter (VC-MH80)	BB
CNV6301	RCNVR0146GEZZ	J	RF Converter (VC-MH90)	BC
TU1401	VTUVTSH6SZ02/	J	Tuner	AZ

INTEGRATED CIRCUITS

IC201	VHiHA201AF3-1	J	Y/C Processor	BC
IC202	VHiMSM7460R-1	J	CCD	AR
IC701	RH-iX0890GEZZ	J	Syscon/Servo/Timer	BA
IC702	VHiS806HZ/-1	J	Reset	AC
IC703	VHiXL93L46F-1	J	E ² PROM	AG
IC704	VHiBA6209//1E	J	Loading Motor Driver	AG
IC705	VHiBA15218F1E	J	Capstan/Drum CTL Amp	AF
IC1401	RH-iX0203GEZZ	J	Band Dec.	AE
IC1402	VHiNJM2230M-1	J	Sync Det.	AH
IC1403	VHiUZT33///-1	J	AT30V Reg.	AC
IC1404	VHiMM1111XF1E	J	Aux Video SW	AE
IC6301	VHiAN3965F/-1	J	Hi-Fi/Normal Audio Processor	AV
IC6302	VHiBA7755AF1E	J	Head SW	AE
IC6303	VHiBA15218F1E	J	Amp	AF

TRANSISTORS

Q201	VS2SA1162Y/-1	J	2SA1162Y	AB
Q202	VS2SC2712Y/-1	J	2SC2712Y	AB
Q203	VS2SC2712Y/-1	J	2SC2712Y	AB
Q204	VS2SC2712Y/-1	J	2SC2712Y	AB
Q205	VS2SA1162Y/-1	J	2SA1162Y	AB
Q206	VS2SC2712Y/-1	J	2SC2712Y	AB
Q207	VS2SC2712Y/-1	J	2SC2712Y	AB
Q208	VS2SC2712Y/-1	J	2SC2712Y	AB
Q209	VS2SC2712Y/-1	J	2SC2712Y	AB
Q270	VSRN1404///-1	J	RN1404	AA
Q280	VSRN1404///-1	J	RN1404	AA
Q282	VS2SC2712Y/-1	J	2SC2712Y	AB

VC-MH80
VC-MH90

TRANSISTORS (Continued)

Q290	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
Q291	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
Q292	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
Q540	VSRN1403///-1	J	RN1403	AA
Q541	VS2SC2712Y/-1	J	2SC2712Y	AB
Q542	VSRN2404///-1	J	RN2404	AA
Q543	VSRN1403///-1	J	RN1403	AA
Q544	VSRN1403///-1	J	RN1403	AA
Q550	VSRN1404///-1	J	RN1404	AA
Q560	VSDTA144ES/-1	J	DTA144ES	AB
Q565	VSRN1404///-1	J	RN1404	AA
Q590	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
Q592	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
Q701	VS2SA1162Y/-1	J	2SA1162Y	AB
Q702	VSRN1402///-1	J	RN1402	AA
Q703	VS2SA1162Y/-1	J	2SA1162Y	AB
Q705	VS2SA1162Y/-1	J	2SA1162Y	AB
Q801	VSRN1403///-1	J	RN1403	AA
Q802	VSRN1403///-1	J	RN1403	AA
Q803	VS2SC2712Y/-1	J	2SC2712Y	AB
Q804	VSRN2403///-1	J	RN2403	AB
Q805	VS2SC2712Y/-1	J	2SC2712Y	AB
Q811	VS2SA1162Y/-1	J	2SA1162Y	AB
Q813	VS2SC2712Y/-1	J	2SC2712Y	AB
Δ Q901	VS2SC4300/-1	J	2SC4300	AM
Δ Q902	VS2SC3377-Q-1	J	2SC3377	AC
Δ Q921	VS2SA1015Y/1E	J	2SA1015Y	AC
Δ Q922	VS2SC2712Y/-1	J	2SC2712Y	AB
Δ Q923	VS2SA1162Y/-1	J	2SA1162Y	AB
Q1401	VSRN1404///-1	J	RN1404	AA
Q1402	VSRN1404///-1	J	RN1404	AA
Q1403	VSRN2403///-1	J	RN2403	AB
Q1404	VS2SC2712Y/-1	J	2SC2712Y	AB
Q1405	VS2SC2712Y/-1	J	2SC2712Y	AB
Q1406	VSRN1403///-1	J	RN1403	AA
Q1407	VS2SC2712Y/-1	J	2SC2712Y	AB
Q1408	VSRN2404///-1	J	RN2404	AA
Q1409	VS2SA1015Y/1E	J	2SA1015Y	AC
Q1411	VSRN1404///-1	J	RN1404	AA
Q1414	VSRN1402///-1	J	RN1402	AA
Q1415	VSDTC144ES/-1	J	DTC144ES	AB
Q1417	VS2SA1162Y/-1	J	2SA1162Y	AB
Q1418	VSRN1404///-1	J	RN1404	AA
Q1419	VSDTA144ES/-1	J	DTA144ES	AB
Q6302	VSRN1404///-1	J	RN1404	AA
Q6305	VSRN2403///-1	J	RN2403	AB
Q6306	VSDTC323TK/-1	J	DTC323TK	AB
Q6307	VSDTC323TK/-1	J	DTC323TK	AB
Q6308	VSDTC323TK/-1	J	DTC323TK	AB
Q6309	VSDTC143TK/-1	J	DTC143TK	AB

TRANSISTORS (Continued)

Q6310	VSRN2403///-1	J	RN2403	AB
Q6311	VSRN1404///-1	J	RN1404	AA
Q6312	VSRN1404///-1	J	RN1404	AA
Q6313	VSRN1404///-1	J	RN1404	AA
Q6314	VS2C3939SQR-1	J	2C3939SQR	AC
Q6315	VSRN1404///-1	J	RN1404	AA
Q6316	VSDTC323TK/-1	J	DTC323TK	AB
Q6317	VSRN1402///-1	J	RN1402	AA
Q6321	VSRN1404///-1	J	RN1404	AA
Q6327	VS2SA1162Y/-1	J	2SA1162Y	AB
Q9901	VS2SC2001LK-1	J	2SC2001LK	AA
Q9902	VS2SD468-C/-1	J	2SD468-C	AD
Q9903	VS2SD468-C/-1	J	2SD468-C	AD
Q9904	VS2SD468-C/-1	J	2SD468-C	AD
Q9907	VSDTA124ES/-1	J	DTA124ES	AB
Q9908	VS2SD468-C/-1	J	2SD468-C	AD
Q9909	VS2SD468-C/-1	J	2SD468-C	AD
Q9910	VSDTA124ES/-1	J	DTA124ES	AB
Q9911	VSDTC124ES/-1	J	DTC124ES	AB
Q9912	VS2SD468-C/-1	J	2SD468-C	AD
Q9913	VS2SA1015Y/1E	J	2SA1015Y	AC
Q9914	VSDTC124ELT-1	J	DTC124ELT	AA
Q9915	VS2SD468-C/-1	J	2SD468-C	AD
Q9916	VSDTC124ES/-1	J	DTC124ES	AB
Q9917	VS2C1740SQR1E	J	2C1740SQR	AC

DIODES

D530	VHD1SS119//1	J	1SS119	AB
D531	VHD1SS119//1	J	1SS119	AB
D540	VHD1SS119//1	J	1SS119	AB
D541	VHD1SS119//1	J	1SS119	AB
D542	VHD1SS119//1	J	1SS119	AB
D545	VHD1SS119//1	J	1SS119	AB
D701	VHD1SS119//1	J	1SS119	AB
D702	VHD1SS119//1	J	1SS119	AB
D703	VHD1SS119//1	J	1SS119	AB
D704	VHD1SS119//1	J	1SS119	AB
D705	VHD1SS119//1	J	1SS119	AB
D707	VHD1SS119//1	J	1SS119	AB
D708	RH-PX0234GEZZ	J	Photodiode	AD
D709	RH-PX0233GEZZ	J	Photodiode	AD
D710	RH-PX0233GEZZ	J	Photodiode	AD
D711	RH-PX0232GEZZ	J	Photodiode	AF
D712	RH-PX0232GEZZ	J	Photodiode	AF
D713	RH-PX0231GEZZ	J	GP1S24	AF
D714	RH-PX0231GEZZ	J	GP1S24	AF
D715	VHD1SS119//1	J	1SS119	AB
D716	VHD1SS119//1	J	1SS119	AB
D717	VHD1SS119//1	J	1SS119	AB
D718	VHD1SS119//1	J	1SS119	AB
D719	VHD1SS119//1	J	1SS119	AB
D720	VHD1SS119//1	J	1SS119	AB
D721	VHD1SS119//1	J	1SS119	AB
D801	VHD1SS119//1	J	1SS119	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
DIODES (Continued)					COILS AND TRANSFORMERS				
△D901	RH-DX0083GEZZ	J	Diode	AC	FL201	RCILF0269GEZZ	J	Coil (VC-MH80)	AH
△D902	RH-DX0220CEZZ	J	Diode	AB	FL6301	RCILI0060GEZZ	J	IF Coil	AD
△D903	RH-DX0321CEZZ	J	Diode	AC	L201	VP-XF151K0000	J	150μH	AB
△D904	VHDERA1802/-1	J	ERA1802	AB	L202	VP-XF150K0000	J	15μH	AB
△D905	VHDERA1802/-1	J	ERA1802	AB	L203	VP-XF330K0000	J	33μH	AB
△D906	RH-DX0053GEZZ	J	Diode	AA	L204	VP-XF120K0000	J	12μH	AB
△D907	RH-EX0001AEZZ	J	Zener Diode	AC	L205	VP-XF820K0000	J	82μH	AB
△D908	RH-EX0722GEZZ	J	Zener Diode	AA	L206	VP-DF1R2M0000	J	1.2μH	AB
△D921	VHD1SS147///-1	J	1SS147	AA	L207	VP-XF560K0000	J	56μH	AB
△D923	VHDL3Z////-1	J	RL3Z	AE	L208	VP-XF151K0000	J	150μH	AB
△D924	VHDL34////-1	J	RK34	AE	L209	VP-XF560K0000	J	56μH	AB
△D925	RH-EX0807GEZZ	J	Zener Diode	AC	L210	VP-XF151K0000	J	150μH	AB
△D926	VHD1SS147///-1	J	1SS147	AA	L250	VP-XF470K0000	J	47μH	AB
△D927	RH-DX0064GEZZ	J	AK04	AC	L251	VCP-XF150K0000	J	15μH	AB
△D928	RH-EX0141GEZZ	J	Zener Diode	AB	L501	VP-MK561K0000	J	560μH	AB
△D929	VHD1SS119///-1	J	1SS119	AB	L502	VP-XF181K0000	J	180μH (VC-MH80)	AB
△D930	RH-EX0615GEZZ	J	Zener Diode	AA	L504	VP-XF150J0000	J	15μH	AB
△D931	VHD1SS119///-1	J	1SS119	AB	L505	VP-XF100K0000	J	10μH	AB
D1401	RH-EX0138GEZZ	J	Zener Diode	AA	L506	VP-XF390J0000	J	39μH	AB
D1402	RH-EX0603GEZZ	J	Zener Diode	AA	L507	VP-YF682J0000	J	6.8mH	AC
D1403	VHD1SS119///-1	J	1SS119	AB	L508	VP-XF680K0000	J	68μH	AB
D1404	VHD1SS119///-1	J	1SS119	AB	L509	VP-XF151K0000	J	150μH	AB
D1405	VHD1SS119///-1	J	1SS119	AB	L510	VP-XF181K0000	J	180μH	AB
D1406	VHD1SS119///-1	J	1SS119	AB	L590	VP-ZK121K0000	J	120μH (VC-MH80)	AB
D1408	VHD1SS119///-1	J	1SS119	AB	L801	VP-XF120K0000	J	12μH	AB
D1409	VHD1SS119///-1	J	1SS119	AB	△L901	RCILF0264GEZZ	J	820μH	AH
D1410	VHD1SS119///-1	J	1SS119	AB	△L902	RCILF0268GEZZ	J	22mH	AG
D1411	VHD1SS119///-1	J	1SS119	AB	△L923	RCILP0175CEZZ	J	22μH	AD
D1412	VHD1SS119///-1	J	1SS119	AB	△L924	RCILP0175CEZZ	J	22μH	AD
D6301	VHD1SS119///-1	J	1SS119	AB	L1401	VP-XFR22K0000	J	0.22μH	AC
D6302	VHD1SS119///-1	J	1SS119	AB	L6301	VP-ZK680K0000	J	68μH	AB
D6303	VHD1SS119///-1	J	1SS119	AB	L6303	VP-YF682J0000	J	6.8mH	AC
D6304	VHD1SS119///-1	J	1SS119	AB	L6304	VP-ZK221K0000	J	220μH	AB
D6305	VHD1SS119///-1	J	1SS119	AB	L6305	VP-DF221K0000	J	220μH	AB
D6306	VHD1SS119///-1	J	1SS119	AB	△T901	RTRNZ0012AJZZ	V	Transformer	AR
D6307	VHD1SS119///-1	J	1SS119	AB	T6301	RTRNH0053GEZZ	J	OSC. Transformer	AE
D6308	VHD1SS119///-1	J	1SS119	AB	CONTROLS				
D9901	RH-EX0139GEZZ	J	Zener Diode	AA	R224	RVR-M4780GEZZ	J	1k (B) REC FM Adj.	AB
D9902	VHD1SS119///-1	J	1SS119	AB	R271	RVR-M4344CEZZ	J	470k (B) Carrier Adj.	AC
D9903	VHD1SS119///-1	J	1SS119	AB	R6308	RVR-M4373GEZZ	J	20k (B) PAL Adj.	AB
D9904	RH-EX0634GEZZ	J	Zener Diode	AA	R6310	RVR-M4371GEZZ	J	10k (B) NTSC Adj.	AC
D9905	VHD1SS119///-1	J	1SS119	AB	R6343	RVR-M4350GEZZ	J	500k (B) Bias Current	AB
D9906	VHD1SS119///-1	J	1SS119	AB	R6363	RVR-M4371GEZZ	J	10k (B) NTSC Adj.	AC
D9907	RH-EX0723GEZZ	J	Zener Diode	AB	R6365	RVR-M4378GEZZ	J	50k (B) PAL Adj.	AB
D9908	VHD1SS119///-1	J	1SS119	AB	CAPACITORS				
△IC901	RH-FX0005GEZZ	J		AE	C201	VCKYD41HB681K	J	680p 50V Ceramic	AA
PACKAGED CIRCUITS					C202	VCKYD41HB391K	J	390p 50V Ceramic	AA
X501	RCRSB0166GEZZ	J	Crystal, 4.43MHz	AG	C203	VCCCCY1HH330J	J	33p 50V Ceramic	AA
X502	RCRSB0188GEZZ	J	Crystal, 3.58MHz	AG	C204	VCCCCY1HH150J	J	15p 50V Ceramic	AA
X701	RCRSB0190GEZZ	J	Crystal, 10MHz	AM	C205	VCCCCY1HH330J	J	33p 50V Ceramic	AA
X702	RCRSB0138GEZZ	J	Crystal, 32kHz	AD	C206	VCCSD41HL470J	J	47p 50V Ceramic	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
CAPACITORS (Continued)					CAPACITORS (Continued)				
C208	VCCCCY1HH560J	J	56p 50V Ceramic	AA	C503	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C209	VCKYCY1HF473Z	J	0.047 50V Ceramic	AA	C504	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB
C210	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C505	VCKYCY1HF473Z	J	0.047 50V Ceramic	AA
C211	VCCSD41HL560J	J	56p 50V Ceramic	AA	C506	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C212	VCEAEA1HW474M	J	0.47 50V Electrolytic	AB	C507	VCKYD41HB181K	J	180p 50V Ceramic	AA
C213	VCFYSA1HB473J	J	0.047 50V Mylar	AA	C508	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C214	VCEAEA1HW224M	J	0.22 50V Electrolytic	AB	C509	VCKYCY1EF153Z	J	0.015 25V Ceramic	AA
C215	VCCCCY1HH101J	J	100p 50V Ceramic	AA	C510	VCEAEA1HW335M	J	3.3 50V Electrolytic	AB
C216	VCCCCY1HH100D	J	10p 50V Ceramic	AA	C511	VCCCCY1HH330J	J	33p 50V Ceramic	AA
C217	VCEAEA1HW105M	J	1 50V Electrolytic	AB	C512	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C218	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C513	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C219	VCKYCY1EB223K	J	0.022 25V Ceramic	AA	C514	VCKYCY1HB392K	J	3900p50V Ceramic	AA
C220	VCEAEA1HW335M	J	3.3 50V Electrolytic	AB	C515	VCKYCY1CB473K	J	0.047 16V Ceramic	AA
C221	VCKYCY1EB223K	J	0.022 25V Ceramic	AA	C516	VCEAEA1HW475M	J	4.7 50V Electrolytic	AB
			(VC-MH90)		C517	VCCCCY1HH180J	J	18p 50V Ceramic	AA
C222	VCKYD41HF104Z	J	0.1 50V Ceramic	AA	C519	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C223	VCEAEA1HW335M	J	3.3 50V Electrolytic	AB				(VC-MH90)	
C224	VCEAEA1HW225M	J	2.2 50V Electrolytic	AB	C520	VCEAEA1HW474M	J	0.47 50V Electrolytic	AB
C225	VCE9EA1HW105M	J	1 50V Elect. (N.P)	AC	C521	VCKYCY1EB223K	J	0.022 25V Ceramic	AA
C226	VCEAEA1HW474M	J	0.47 50V Electrolytic	AB	C522	VCCCCY1HH680J	J	68p 50V Ceramic	AA
C228	VCEAEA1HW224M	J	0.22 50V Electrolytic	AB	C523	VCEAEA1CW106M	J	10 16V Electrolytic	AB
C229	VCKYCY1HF473Z	J	0.047 50V Ceramic	AA	C524	VCCCCY1HH820J	J	82p 50V Ceramic	AA
C230	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB	C525	VCEAEA1HW105M	J	1 50V Electrolytic	AB
C233	VCEAEA1HW105M	J	1 50V Electrolytic	AB	C526	VCKYD41HB271K	J	270p 50V Ceramic	AA
C234	VCKYCY1HF473Z	J	0.047 50V Ceramic	AA				(VC-MH80)	
C235	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB	C526	VCCSD41HL680J	J	68p 50V Ceramic	AA
C236	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA				(VC-MH90)	
C237	VCCCCY1HH330J	J	33p 50V Ceramic	AA	C527	VCCSD41HL470J	J	47p 50V Ceramic	AA
C238	VCCCCY1HH5R0C	J	5p 50V Ceramic	AA	C528	VCCSD41HL560J	J	56p 50V Ceramic	AA
C239	VCCCCY1HH560J	J	56p 50V Ceramic	AA	C529	VCEAEA1HW475M	J	4.7 50V Electrolytic	AB
C240	VCKYD41HB391K	J	390p 50V Ceramic	AA	C530	VCCCCY1HH121J	J	120p 50V Ceramic	AA
C242	VCCCCY1HH560J	J	56p 50V Ceramic	AA	C531	VCCCCY1HH1R0C	J	1p 50V Ceramic	AA
C243	VCCCCY1HH470J	J	47p 50V Ceramic	AA	C532	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C244	VCCCCY1HH221J	J	220p 50V Ceramic	AA	C533	VCCCCY1HH470J	J	47p 50V Ceramic	AA
C246	VCKYCY1CB473K	J	0.047 16V Ceramic	AA	C535	VCKYD41HB391K	J	390p 50V Ceramic	AA
C250	VCKYCY1EB103K	J	0.01 25V Ceramic	AA	C540	VCFYSA1HB184J	J	0.18 50V Mylar	AB
C251	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C550	VCCCCY1HH8R0D	J	8p 50V Ceramic	AA
C252	VCCSD41HL390J	J	39p 50V Ceramic	AA	C580	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C254	VCCCCY1HH820J	J	82p 50V Ceramic	AA	C590	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C255	VCKYCY1EB103K	J	0.01 25V Ceramic	AA				(VC-MH80)	
C260	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C591	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C261	VCCCCY1HH101J	J	100p 50V Ceramic	AA				(VC-MH80)	
C265	VCKYCY1EB223K	J	0.022 25V Ceramic	AA	C592	VCKYCY1EB223K	J	0.022 25V Ceramic	AA
C266	VCCCCY1HH101J	J	100p 50V Ceramic	AA				(VC-MH80)	
C267	VCCCCY1HH101J	J	100p 50V Ceramic	AA	C593	VCCCCY1HH390J	J	39p 50V Ceramic	AA
C270	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA				(VC-MH80)	
C280	VCKYCY1EB223K	J	0.022 25V Ceramic	AA	C594	VCCCCY1HH391J	J	390p 50V Ceramic	AA
C281	VCKYCY1HF473Z	J	0.047 50V Ceramic	AA				(VC-MH80)	
C290	VCKYCY1EB223K	J	0.022 25V Ceramic	AA	C702	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
			(VC-MH80)		C703	VCEAEA1HW105M	J	1 50V Electrolytic	AB
C292	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB	C705	VCFYSA1HB104J	J	0.1 50V Mylar	AB
			(VC-MH80)		C707	VCKYCY1HB102K	J	1000p50V Ceramic	AA
C293	VCCCCY1HH330J	J	33p 50V Ceramic	AA	C708	RC-EZ0123GEZZ	J	47 10V Electrolytic	AB
			(VC-MH80)		C709	VCEAEA1CW226M	J	22 16V Electrolytic	AB
C501	VCKYD41CX332N	J	3300p16V Ceramic	AA	C710	VCKYCY1HB102K	J	1000p50V Ceramic	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
CAPACITORS (Continued)					CAPACITORS (Continued)				
C711	VCEAEU1CW106M	J 10	16V Electrolytic	AB	C769	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA
C712	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	C770	VCFYSA1HB104J	J 0.1	50V Mylar	AB
C713	VCEAEA1HW225M	J 2.2	50V Electrolytic	AB	C771	VCEAEA0JW476M	J 47	6.3V Electrolytic	AB
C714	VCEAEA1HW225M	J 2.2	50V Electrolytic	AB	C772	VCFYSA1HB153J	J 0.015	50V Mylar	AA
C715	VCEAEU1CW106M	J 10	16V Electrolytic	AB	C773	VCKYCY1HB102K	J 1000p	50V Ceramic	AA
C716	VCEAEU1HW225M	J 2.2	50V Electrolytic	AB	C774	VCKYCY1EF104Z	J 0.1	25V Ceramic	AA
C717	VCKYCY1HB102K	J 1000p	50V Ceramic	AA	C776	VCKYCY1HB102K	J 1000p	50V Ceramic	AA
C718	VCEAEU1HW105M	J 1	50V Electrolytic	AB	C801	VCFYSA1HB473J	J 0.047	50V Mylar	AA
C719	VCEAEU1HW105M	J 1	50V Electrolytic	AB	C802	VCKYCY1HB222K	J 2200p	50V Ceramic	AA
C720	VCKYCY1HB102K	J 1000p	50V Ceramic	AA	C803	VCEAEA1HW105M	J 1	50V Electrolytic	AB
C721	VCE9EA1HW105M	J 1	50V Elect. (N.P)	AC	C806	VCEAEA1CW106M	J 10	16V Electrolytic	AB
C722	VCCCCY1HH120J	J 12p	50V Ceramic	AA	C807	VCKYCY1HB102K	J 1000p	50V Ceramic	AA
C724	VCCCCY1HH220J	J 22p	50V Ceramic	AA	C808	VCFYSA1HB334J	J 0.33	50V Mylar	AB
C725	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	C809	VCEAEA1HW105M	J 1	50V Electrolytic	AB
C726	VCCCCY1HH220J	J 22p	50V Ceramic	AA	C811	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA
C727	VCCCCY1HH220J	J 22p	50V Ceramic	AA	C812	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA
C728	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C901	RC-FZ016SGEZZ	J 0.47	250V M.Polyester	AK
C729	VCKYCY1HB472K	J 4700p	50V Ceramic	AA	△C902	RC-KZ0041GEZZ	J 220p	400V Ceramic	AB
C730	VCEAEA0JW336M	J 33	6.3V Electrolytic	AB	△C903	RC-KZ0041GEZZ	J 220p	400V Ceramic	AB
C731	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C904	RC-FZ008SGEZZ	J 0.1	250v M.Polyester	AD
C732	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C905	RC-KZ0175CEZZ	J 2200p	400V Ceramic	AB
C733	VCKYCY1HB472K	J 4700p	50V Ceramic	AA	△C906	RC-KZ0175CEZZ	J 2200p	400V Ceramic	AB
C734	VCEAEA0JW107M	J 100	6.3V Electrolytic	AB	△C907	RC-EZ0437GEZZ	J 68	400V Electrolytic	AH
C735	VCEAEA1HW105M	J 1	50V Electrolytic	AB	△C908	RC-KZ0175CEZZ	J 2200p	400V Ceramic	AB
C736	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C909	RC-KZ0175CEZZ	J 2200p	400V Ceramic	AB
C738	VCCCCY1HH470J	J 47p	50V Ceramic	AA	△C910	VCEAGA2AW106M	J 10	100V Electrolytic	AC
C739	VCCCCY1HH470J	J 47p	50V Ceramic	AA	△C911	VCFYAG2GA473K	J 0.047	400V M.Polyester	AD
C740	VCKYCY1HB102K	J 1000p	50V Ceramic	AA	△C912	RC-KZ0037GEZZ	J 220p	1kV Ceramic	AC
C741	VCKYCY1HB102K	J 1000p	50V Ceramic	AA	△C913	VCFYSA1HB104J	J 0.1	50V Mylar	AB
C742	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C914	VCFYSA1HB473J	J 0.047	50V Mylar	AA
C743	RC-EZ0426GEZZ	J 47000	Electrolytic	AE	△C915	VCFYSA1HB473J	J 0.047	50V Mylar	AA
C744	VCKYD41HB102K	J 1000p	50V Ceramic	AA	△C916	RC-QZA222TAYJ	J 2200p	50V Mylar	AB
C745	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C924	RC-QZ0104GEZZ	J 2200p	250V Mylar	AC
C746	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C925	RC-EZ0439GEZZ	J 2200	16V Electrolytic	AF
C747	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C926	VCEAGA1CW107M	J 100	16V Electrolytic	AB
C748	VCKYD41CY103N	J 0.01	16V Ceramic	AA	△C927	VCEAGA1JW107M	J 100	63V Electrolytic	AC
C749	VCKYCY1HB102K	J 1000p	50V Ceramic	AA	△C929	RC-EZ0438GEZZ	J 2200	10V Electrolytic	AF
C750	VCKYCY1HB102K	J 1000p	50V Ceramic	AA	△C930	VCEAGA1AW477M	J 470	10V Electrolytic	AC
C751	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C931	VCEAGA1HW476M	J 47	50V Electrolytic	AB
C752	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	△C933	VCEAGA1AW477M	J 470	10V Electrolytic	AC
C753	VCKYCY1EF104Z	J 0.1	25V Ceramic	AA	△C935	VCEAEA1HW105M	J 1	50V Electrolytic	AB
C754	VCE9EA1HW105M	J 1	50V Elect. (N.P)	AC	△C936	VCKYCY1EF104Z	J 0.1	25V Ceramic	AA
C755	VCEAEA1CW476M	J 47	16V Electrolytic	AB	△C937	VCKYCY1EF104Z	J 0.1	25V Ceramic	AA
C756	VCKYCY1EF104Z	J 0.1	25V Ceramic	AA	C938	VCKYCY1EF104Z	J 0.1	25V Ceramic	AA
C757	VCKYCY1EF104Z	J 0.1	25V Ceramic	AA	C939	VCFYSA1HB103J	J 0.01	50V Mylar	AA
C758	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	C1401	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA
C759	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA	C1402	VCEAEA1CW476M	J 47	16V Electrolytic	AB
C760	VCEAEA1CW226M	J 22	16V Electrolytic	AB	C1403	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA
C761	VCKYD41CY103N	J 0.01	16V Ceramic	AA	C1404	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA
C762	VCKYCY1EB103K	J 0.01	25V Ceramic	AA	C1406	VCEAEA1HW105M	J 1	50V Electrolytic	AB
C763	VCKYCY1EF104Z	J 0.1	25V Ceramic	AA	C1407	VCFYSA1HB334J	J 0.33	50V Mylar	AB
C764	VCKYCY1HB102K	J 1000p	50V Ceramic	AA	C1408	VCKYCY1HF103Z	J 0.01	50V Ceramic	AA
C765	VCFYSA1HB334J	J 0.33	50V Mylar	AB	C1409	VCEAEA1CW226M	J 22	16V Electrolytic	AB
C767	VCKYCY1HB102K	J 1000p	50V Ceramic	AA	C1410	VCKYCY1HB102K	J 1000p	50V Ceramic	AA
C768	VCCCCY1HH470J	J 47p	50V Ceramic	AA	C1411	VCEAEA1CW476M	J 47	16V Electrolytic	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
CAPACITORS (Continued)					CAPACITORS (Continued)				
C1412	VCEAEA1HW104M	J	0.1 50V Electrolytic	AB	C6335	VCKYCY1HB182K	J	1800p50V Ceramic	AA
C1418	VCEAEA1CW476M	J	47 16V Electrolytic	AB	C6336	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C1419	VCFYSA1HB153J	J	0.015 50V Mylar	AA	C6337	VCFYSA1HB473J	J	0.047 50V Mylar	AA
C1420	VCFYSA1HB103J	J	0.01 50V Mylar	AA	C6338	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C1421	VCEAEA1CW476M	J	47 16V Electrolytic	AB	C6339	VCFYSA1HB183J	J	0.018 50V Mylar	AA
C1422	VCEAEA1CW476M	J	47 16V Electrolytic	AB	C6340	VCKYCY1HB222K	J	2200p50V Ceramic	AA
C1423	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C6341	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C1424	VCFYHA1HA334J	J	0.33 50V Mylar	AC	C6342	VCCSPA1HL221J	J	220p 50V Ceramic	AA
C1425	VCEAEA1CW476M	J	47 16V Electrolytic	AB	C6343	VCQPSA2AA562J	J	5600p100V Mylar	AC
C1426	VCEAEA1HW475M	J	4.7 50V Electrolytic	AB	C6344	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C1427	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C6345	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C1428	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C6346	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1429	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C6347	VCEAEA1CW476M	J	47 16V Electrolytic	AB
C1430	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C6349	VCEAEA1CW476M	J	47 16V Electrolytic	AB
C1433	VCKYCY1EB103K	J	0.01 25V Ceramic	AA	C6350	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C1434	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C6352	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C1452	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6353	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C1453	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6354	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C1457	VCKYCY1HB102K	J	1000p50V Ceramic	AA	C6355	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C1458	VCEAEA1CW226M	J	22 16V Electrolytic	AB	C6356	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C1459	VCEAEA1HW335M	J	3.3 50V Electrolytic	AB	C6357	VCKYCY1CB473K	J	0.047 16V Ceramic	AA
C1465	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C6358	VCEAEA1CW336M	J	33 16V Electrolytic	AB
C1466	VCEAEA1CW476M	J	47 16V Electrolytic	AB	C6359	VCEAEA1HW225M	J	2.2 50V Electrolytic	AB
C1467	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6360	VCEAEA0JW107M	J	100 6.3V Electrolytic	AB
C6301	VCCCCY1HH101J	J	100p 50V Ceramic	AA	C6361	VCFYSA1HB153J	J	0.015 50V Mylar	AA
C6304	VCEAEA1HW225M	J	2.2 50V Electrolytic	AB	C6362	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C6305	VCKYCY1EB103K	J	0.01 25V Ceramic	AA	C6363	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C6306	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6364	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA
C6307	VCCCCY1HH560J	J	56p 50V Ceramic	AA	C6365	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C6308	VCCCCY1HH560J	J	56p 50V Ceramic	AA	C6366	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA
C6309	VCKYCY1EB103K	J	0.01 25V Ceramic	AA	C6367	VCEAEA1HW105M	J	1 50V Electrolytic	AB
C6310	VCKYCY1EB103K	J	0.01 25V Ceramic	AA	C6368	VCEAEA1HW105M	J	1 50V Electrolytic	AB
C6311	VCFYSA1HB153J	J	0.015 50V Mylar	AA	C6369	VCEAEA1HW224M	J	0.22 50V Electrolytic	AB
C6312	VCEAEA0JW107M	J	100 6.3V Electrolytic	AB	C6370	VCEAEA1HW224M	J	0.22 50V Electrolytic	AB
C6313	VCEAEA1HW225M	J	2.2 50V Electrolytic	AB	C6371	VCKYCY1HB102K	J	1000p50V Ceramic	AA
C6314	VCEAEA1CW336M	J	33 16V Electrolytic	AB	C6372	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C6315	VCKYCY1CB473K	J	0.047 16V Ceramic	AA	C6373	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C6316	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA	C6374	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C6317	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA	C6375	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C6318	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA	C6376	VCEAEA1CW106M	J	10 16V Electrolytic	AB
C6319	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA	C6379	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C6320	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA	C6380	VCEAEA1CW476M	J	47 16V Electrolytic	AB
C6322	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB	C6381	VCEAGA0JW477M	J	470 6.3V Electrolytic	AB
C6323	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6382	VCCCCY1HH330J	J	33p 50V Ceramic	AA
C6324	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6383	VCEAEA1CW106M	J	10 16V Electrolytic	AB
C6325	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6385	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C6326	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6388	VCKYCY1HB561K	J	560p 50V Ceramic	AA
C6327	VCEAEA1CW226M	J	22 16V Electrolytic	AB	C6389	VCKYCY1HB561K	J	560p 50V Ceramic	AA
C6328	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C6390	VCKYCY1HB561K	J	560p 50V Ceramic	AA
C6329	VCCCCY1HH560J	J	56p 50V Ceramic	AA	C6391	VCKYCY1HB561K	J	560p 50V Ceramic	AA
C6330	VCEAEA1HW335M	J	3.3 50V Electrolytic	AB	C9901	VCEAEA1CW226M	J	22 16V Electrolytic	AB
C6331	VCFYSA1HB153J	J	0.015 50V Mylar	AA	C9902	VCEAEA1AW476M	J	47 10V Electrolytic	AB
C6332	VCEAEA1CW106M	J	10 16V Electrolytic	AB	C9904	VCEAEA0JW226M	J	22 6.3V Electrolytic	AB
C6333	VCKYCY1HB681K	J	680p 50V Ceramic	AA	C9905	VCEAEA1CW226M	J	22 16V Electrolytic	AB
C6334	VCEAEA1HW224M	J	0.22 50V Electrolytic	AB	C9913	VCEAEA1CW106M	J	10 16V Electrolytic	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RESISTORS					RESISTORS (Continued)				
POR701	VRG-SC2EB2R2J	J	2.2 1/4W Fuse Resistor	AC	R296	VRD-RA2BE273J	J	27k 1/8W Carbon	AA
R201	VRD-RA2BE681J	J	680k 1/8W Carbon	AA				(VC-MH80)	
R202	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA	R297	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
R203	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA				(VC-MH80)	
R204	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA	R298	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
R205	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA				(VC-MH80)	
R206	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA	R501	VRS-CY1JF391J	J	390 1/16W Metal Oxide	AA
R207	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA	R502	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
R208	VRD-RA2BE471J	J	470 1/8W Carbon	AA	R505	VRS-CY1JF395J	J	3.9M1/16W Metal Oxide	AA
R209	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA	R506	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R210	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA	R507	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R211	VRD-RA2BE181J	J	180 1/8W Carbon	AA	R508	VRS-CY1JF272J	J	2.7k 1/8W Metal Oxide	AA
R212	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA	R510	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA
R213	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA	R511	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA
R214	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R513	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R215	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA	R514	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA
R216	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA	R515	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA
R217	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R517	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R219	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide	AA	R520	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R220	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA	R521	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R228	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	R522	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R229	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R523	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R230	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R540	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R250	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA	R541	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R251	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA	R560	VRD-RA2BE222J	J	2.2k 1/8W Carbon	AA
R252	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA	R565	VRD-RA2BE222J	J	2.2k 1/8W Carbon	AA
R253	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA	R580	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R254	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA	R590	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R255	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA				(VC-MH80)	
R256	VRD-RA2BE471J	J	470 1/8W Carbon	AA	R591	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA
R257	VRD-RA2BE821J	J	820 1/8W Carbon	AA				(VC-MH80)	
R258	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R592	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide	AA
R259	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA				(VC-MH80)	
R260	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA	R593	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R270	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA				(VC-MH80)	
R272	VRD-RA2BE684J	J	680k 1/8W Carbon	AA	R594	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA
R279	VRS-CY1JF182J	J	1.8k 1/16W Metal Oxide	AA				(VC-MH80)	
R280	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA	R595	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide	AA
R281	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA				(VC-MH80)	
R282	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA	R701	VRD-RA2BE273J	J	27k 1/8W Carbon	AA
R283	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA	R702	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA
R286	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA	R703	VRS-CY1JF391J	J	390 1/16W Metal Oxide	AA
R287	VRD-RA2BE151J	J	150 1/8W Carbon	AA	R704	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA
R290	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA	R705	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
			(VC-MH80)		R706	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R291	VRS-CY1JF272J	J	2.7k 1/8W Metal Oxide	AA	R707	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
			(VC-MH80)		R708	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R292	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA	R709	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
			(VC-MH80)		R710	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA
R293	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA	R711	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA
			(VC-MH80)		R712	VRD-RA2BE223J	J	22k 1/8W Carbon	AA
R294	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA	R713	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
			(VC-MH80)		R714	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
R295	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R715	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
			(VC-MH80)		R716	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RESISTORS (Continued)					RESISTORS (Continued)				
R717	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA	R773	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R718	VRS-CY1JF823J	J	82k 1/16W Metal Oxide	AA	R775	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA
R719	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA	R776	VRS-CY1JF124J	J	120k 1/16W Metal Oxide	AA
R720	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA	R777	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R721	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA	R778	VRS-CY1JF684J	J	680k 1/16W Metal Oxide	AA
R722	VRS-CY1JF334J	J	330k 1/16W Metal Oxide	AA	R779	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA
R723	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA	R780	VRS-CY1JF105J	J	1M 1/16W Metal Oxide	AA
R724	VRS-CY1JF474J	J	470k 1/16W Metal Oxide	AA	R781	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R725	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA	R782	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R726	VRS-CY1JF683J	J	68k 1/16W Metal Oxide	AA	R784	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R727	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA	R785	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R728	VRS-CY1JF334J	J	330k 1/16W Metal Oxide	AA	R786	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R729	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA	R787	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R730	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA	R788	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R731	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R789	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
R732	VRD-RA2HD680J	J	68 1/2W Carbon	AA	R790	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R733	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA	R791	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R734	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	R792	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R735	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	R793	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R736	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R794	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
R737	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	R795	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R738	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	R796	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R739	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA	R797	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R741	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R801	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA
R742	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R802	VRD-RA2BE822J	J	8.2k 1/8W Carbon	AA
R743	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R803	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
R744	VRD-RA2BE123J	J	12k 1/8W Carbon	AA	R804	VRS-CY1JF683J	J	68k 1/16W Metal Oxide	AA
R745	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA	R805	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R746	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R806	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R747	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA	R807	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R748	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R808	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA
R749	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA	R809	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA
R750	VRD-RA2BE221J	J	220 1/8W Carbon	AA	R810	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R751	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA	R811	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R752	VRD-RA2BE221J	J	220 1/8W Carbon	AA	R821	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R753	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA	R822	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R754	VRD-RA2BE123J	J	12k 1/8W Carbon	AA	R823	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R755	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R824	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R756	VRD-RA2EE151J	J	150 1/4W Carbon	AA	R825	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R757	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA	R826	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R758	VRD-RA2BE271J	J	270 1/8W Carbon	AA	R830	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA
R759	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA	R831	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
R760	VRD-RA2BE271J	J	270 1/8W Carbon	AA	R832	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R761	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R833	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R762	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R835	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R763	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA	R838	VRD-RA2BE334J	J	330k 1/8W Carbon	AA
R764	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R840	VRD-RA2BE154J	J	150k 1/8W Carbon	AA
R765	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	△ R901	VRD-RA2HD105J	J	1M 1/2W Carbon	AA
R766	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	△ R902	RR-WZ0002GEZZ	J	2.2 2W Cement	AD
R767	VRD-RA2HD1R0J	J	1 1/2W Carbon	AA	△ R903	VRC-UA2HG685K	J	6.8M 1/2W Solid	AA
R768	VRD-RA2HD1R0J	J	1 1/2W Carbon	AA	△ R904	VRC-UA2HG685K	J	6.8M 1/2W Solid	AA
R769	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	△ R905	VRS-VV3AB104J	J	100k 1W Metal Oxide	AB
R770	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	△ R906	VRS-VV3AB104J	J	100k 1W Metal Oxide	AB
R771	VRD-RA2BE103J	J	10k 1/8W Carbon	AA	△ R907	VRN-MA2EK333F	J	33k 1/4W Metal Film	AB
R772	VRD-RA2BE223J	J	22k 1/8W Carbon	AA	△ R908	RR-SZ0006GEZZ	J	68k 3W Cement	AD

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RESISTORS (Continued)					RESISTORS (Continued)				
△ R909	RR-SZ0004GEZZ	J	100 2W Cement	AB	R6307	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
△ R910	RR-SZ0005GEZZ	J	47 3W Cement	AD	R6309	VRS-CY1JF151J	J	150 1/16W Metal Oxide	AA
△ R911	VRN-MA2EK101F	J	100 1/4W Metal Film	AB	R6311	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
△ R912	VRN-MA2EK821F	J	820 1/4W Metal Film	AB	R6312	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
△ R921	VRD-RA2HD100J	J	10 1/2W Carbon	AA	R6313	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
△ R922	VRD-RA2HD1R0J	J	1 1/2W Carbon	AA	R6314	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA
△ R923	VRG-SC2EB100J	J	10 1/4W Fuse Resistor	AB	R6315	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
△ R924	VRG-SC2EB1R0J	J	1 1/4W Fuse Resistor	AB	R6317	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA
△ R925	VRS-CY1JF221J	J	220 1/16W Metal Oxide	AA	R6318	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
△ R926	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R6320	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
△ R927	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA	R6321	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA
△ R928	VRD-RA2BE221J	J	220 1/8W Carbon	AA	R6322	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
△ R929	VRS-CY1JF221J	J	220 1/16W Metal Oxide	AA	R6323	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
△ R930	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA	R6324	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
△ R931	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA	R6325	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
△ R932	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA	R6326	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
△ R933	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA	R6327	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R934	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA	R6328	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R935	VRS-CY1JF184J	J	180k 1/16W Metal Oxide	AA	R6329	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R1401	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R6330	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1413	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA	R6331	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R1414	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA	R6332	VRS-CY1JF181J	J	180 1/16W Metal Oxide	AA
R1415	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA	R6333	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R1416	VRS-CY1JF683J	J	68k 1/16W Metal Oxide	AA	R6334	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1417	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA	R6335	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R1418	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA	R6336	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R1419	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA	R6337	VRS-CY1JF332J	J	3.3k 1/16W Metal Oxide	AA
R1420	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA	R6338	VRD-RA2BE181J	J	180 1/8W Carbon	AA
R1421	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA	R6339	VRS-CY1JF820J	J	82 1/16W Metal Oxide	AA
R1422	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA	R6340	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1423	VRD-RA2BE223J	J	22k 1/8W Carbon	AA	R6341	VRS-CY1JF100J	J	10 1/16W Metal Oxide	AA
R1424	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R6342	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R1425	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA	R6344	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R1426	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA	R6345	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA
R1428	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R6346	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1429	VRD-RA2HD102J	J	1k 1/2W Carbon	AA	R6347	VRG-SC2EB4R7J	J	4.7 1/4W Fuse Resistor	AB
R1430	VRD-RA2EE123J	J	12k 1/4W Carbon	AA	R6348	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R1433	VRD-RA2HD822J	J	8.2k 1/2W Carbon	AA	R6349	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1434	VRD-RA2EE561J	J	560 1/4W Carbon	AA	R6350	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA
R1435	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA	R6351	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R1436	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA	R6352	VRS-CY1JF335J	J	3.3M 1/16W Metal Oxide	AA
R1437	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA	R6354	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R1438	VRS-CY1JF274J	J	270k 1/16W Metal Oxide	AA	R6355	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA
R1439	VRS-CY1JF684J	J	680k 1/16W Metal Oxide	AA	R6356	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R1441	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA	R6357	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA
R1442	VRD-RA2BE223J	J	22k 1/8W Carbon	AA	R6358	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA
R1443	VRD-RA2BE103J	J	10k 1/8W Carbon	AA	R6359	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R1463	VRD-RA2BE472J	J	4.7k 1/8W Carbon	AA	R6360	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R6301	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA	R6361	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
			(VC-MH80)		R6362	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R6302	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA	R6364	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA
			(VC-MH80)		R6366	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R6303	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA	R6367	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R6304	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	R6368	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R6306	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA	R6369	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA

VC-MH80
VC-MH90

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RESISTORS (Continued)					MISCELLANEOUS PARTS (Continued)				
R6370	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA	△ F901	QFS-C2023CEZZ	J	Fuse T2AL/250V	AD
R6371	VRS-CY1JF105J	J	1M 1/16W Metal Oxide	AA	J6301	QJAKL0002AJZZ	J	Jack, AV	AN
R6372	VRS-CY1JF105J	J	1M 1/16W Metal Oxide	AA	P701	QPLGZ1074GEZZ	J	Plug, 10pin (AC)	AC
R6373	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA	P702	QPLGN0247REZZ	J	Plug, 2pin (AL)	AA
R6378	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA	P704	QPLGN0278GEZZ	J	Plug, 2pin (AB)	AA
R6379	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA	△ P901	QPLGN0269GEZZ	J	Plug, 2pin (AP)	AB
R6380	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA	P1401	QSOCN0794GEZZ	J	Socket, 7pin (AI)	AB
R6386	VRD-RA2EE181J	J	180 1/4W Carbon	AA	P1402	QSOCN0694GEZZ	J	Socket, 6pin (AJ)	AB
R6387	VRD-RA2EE151J	J	150 1/4W Carbon	AA	P6301	QPLGN0247REZZ	J	Plug, 2pin (AE)	AA
R6388	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA	SC701	QSOCN0694GEZZ	J	Socket, 6pin (AD)	AB
R6389	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA	P6302	QPLGN0578GEZZ	J	Plug, 5pin (AV)	AB
R6390	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA	SC201	QSOCZ1425CEZZ	J	Socket, 14pin (AX)	AD
R6391	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA	SC501	QSOCN1294GEZZ	J	Socket, 12pin (AZ)	AC
R6392	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA				(VC-MH80)	
R6393	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	SC702	QSOCN1294GEZZ	J	Socket, 12pin (AT)	AC
R6397	VRD-RA2BE683J	J	68k 1/8W Carbon	AA	SC1402	QSOCN0994GEZZ	J	Socket, 9pin (AO)	AC
R9902	VRD-RA2BE331J	J	330 1/8W Carbon	AA	SC1405	QSOCN0994GEZZ	J	Socket, 9pin (AQ)	AC
R9903	VRS-CY1JF391J	J	390 1/16W Metal Oxide	AA	SC1410	QSOCZ1312CEZZ	J	Socket, 13pin (FA)	AD
R9904	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA	SC1411	QSOCZ0512CEZZ	J	Socket, 5pin (FC)	AB
R9906	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA	SC6301	QSOCN0894GEZZ	J	Socket, 8pin (AG)	AC
R9907	VRD-RA2BE100J	J	10 1/8W Carbon	AA	SC6302	QSOCZ0825CEZZ	J	Socket, 8pin (AS)	AD
R9909	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA	TP2201	QPLGZ0352GEZZ	J	Test Point, 3pin	AA
R9910	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA	TP2204	QPLGZ0252GEZZ	J	Test Point, 2pin	AA
R9911	VRD-RA2BE271J	J	270 1/8W Carbon	AA	TP6301	QPLGZ0252GEZZ	J	Test Point, 2pin	AA
R9912	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	TP6303	QPLGZ0252GEZZ	J	Test Point, 2pin	AA
R9913	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA					
R9914	VRD-RA2BE181J	J	180 1/8W Carbon	AA					
R9915	VRD-RA2BE221J	J	220 1/8W Carbon	AA					
R9916	VRS-CY1JF100J	J	10 1/16W Metal Oxide	AA					
R9918	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA					
R9919	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA					
R9920	VRD-RA2BE223J	J	22k 1/8W Carbon	AA					
R9921	VRS-CY1JF220J	J	22 1/16W Metal Oxide	AA					
R9922	VRD-RA2HD100J	J	10 1/2W Carbon	AA					
R9924	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA					
R9925	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA					
R9926	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA					
R9930	VRS-CY1JF124J	J	120k 1/16W Metal Oxide	AA					
R9931	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA					
R9932	VRD-RA2BE273J	J	27k 1/8W Carbon	AA					
R9933	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA					
R9934	VRD-RA2HD6R8J	J	6.8 1/2W Carbon	AA					
R9935	VRD-RA2HD6R8J	J	6.8 1/2W Carbon	AA					
R9938	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA					
R9939	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA					
MISCELLANEOUS PARTS									
△	QACCB5002AJZZ	V	AC Cord (VC-MH80)						
△	QACCV2005AJZZ	V	AC Cord (VC-MH90)	AM					
	FB701	RBLN-0043CEZZ	J	Ferrite Bead	AB				
△	FB901	RBLN-0019CEZZ	J	Ferrite Bead	AB				
△	FB902	RBLN-0019CEZZ	J	Ferrite Bead	AB				
△	FH901	QFSHD1009CEZZ	J	Fuse Holder	AA				
△	FH902	QFSHD1010CEZZ	J	Fuse Holder	AA				

— End of Main —

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RESISTORS (Continued)					RESISTORS (Continued)				
△ R909	RR-SZ0004GEZZ	J	100 2W Cement	AB	R6307	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
△ R910	RR-SZ0005GEZZ	J	47 3W Cement	AD	R6309	VRS-CY1JF151J	J	150 1/16W Metal Oxide	AA
△ R911	VRN-MA2EK101F	J	100 1/4W Metal Film	AB	R6311	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
△ R912	VRN-MA2EK821F	J	820 1/4W Metal Film	AB	R6312	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
△ R921	VRD-RA2HD100J	J	10 1/2W Carbon	AA	R6313	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
△ R922	VRD-RA2HD1R0J	J	1 1/2W Carbon	AA	R6314	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA
△ R923	VRG-SC2EB100J	J	10 1/4W Fuse Resistor	AB	R6315	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
△ R924	VRG-SC2EB1R0J	J	1 1/4W Fuse Resistor	AB	R6317	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA
△ R925	VRS-CY1JF221J	J	220 1/16W Metal Oxide	AA	R6318	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
△ R926	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R6320	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
△ R927	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA	R6321	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA
△ R928	VRD-RA2BE221J	J	220 1/8W Carbon	AA	R6322	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
△ R929	VRS-CY1JF221J	J	220 1/16W Metal Oxide	AA	R6323	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
△ R930	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA	R6324	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
△ R931	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA	R6325	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
△ R932	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA	R6326	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA
△ R933	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA	R6327	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
R934	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA	R6328	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA
R935	VRS-CY1JF184J	J	180k 1/16W Metal Oxide	AA	R6329	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R1401	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R6330	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1413	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA	R6331	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R1414	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA	R6332	VRS-CY1JF181J	J	180 1/16W Metal Oxide	AA
R1415	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA	R6333	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R1416	VRS-CY1JF683J	J	68k 1/16W Metal Oxide	AA	R6334	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1417	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA	R6335	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R1418	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA	R6336	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R1419	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide	AA	R6337	VRS-CY1JF332J	J	3.3k 1/16W Metal Oxide	AA
R1420	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA	R6338	VRD-RA2BE181J	J	180 1/8W Carbon	AA
R1421	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA	R6339	VRS-CY1JF820J	J	82 1/16W Metal Oxide	AA
R1422	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA	R6340	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1423	VRD-RA2BE223J	J	22k 1/8W Carbon	AA	R6341	VRS-CY1JF100J	J	10 1/16W Metal Oxide	AA
R1424	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA	R6342	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
R1425	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA	R6344	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R1426	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA	R6345	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA
R1428	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	R6346	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1429	VRD-RA2HD102J	J	1k 1/2W Carbon	AA	R6347	VRG-SC2EB4R7J	J	4.7 1/4W Fuse Resistor	AB
R1430	VRD-RA2EE123J	J	12k 1/4W Carbon	AA	R6348	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
R1433	VRD-RA2HD822J	J	8.2k 1/2W Carbon	AA	R6349	VRS-CY1JF682J	J	6.8k 1/16W Metal Oxide	AA
R1434	VRD-RA2EE561J	J	560 1/4W Carbon	AA	R6350	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA
R1435	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA	R6351	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R1436	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA	R6352	VRS-CY1JF335J	J	3.3M 1/16W Metal Oxide	AA
R1437	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA	R6354	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R1438	VRS-CY1JF274J	J	270k 1/16W Metal Oxide	AA	R6355	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA
R1439	VRS-CY1JF684J	J	680k 1/16W Metal Oxide	AA	R6356	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R1441	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA	R6357	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA
R1442	VRD-RA2BE223J	J	22k 1/8W Carbon	AA	R6358	VRS-CY1JF471J	J	470 1/16W Metal Oxide	AA
R1443	VRD-RA2BE103J	J	10k 1/8W Carbon	AA	R6359	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
R1463	VRD-RA2BE472J	J	4.7k 1/8W Carbon	AA	R6360	VRS-CY1JF123J	J	12k 1/16W Metal Oxide	AA
R6301	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA	R6361	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA
			(VC-MH80)		R6362	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA
R6302	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA	R6364	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA
			(VC-MH80)		R6366	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R6303	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide	AA	R6367	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
R6304	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	R6368	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
R6306	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA	R6369	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA

VC-MH80
VC-MH90

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RESISTORS (Continued)					MISCELLANEOUS PARTS (Continued)				
R6370	VRS-CY1JF393J	J	39k 1/16W Metal Oxide	AA	△ F901	QFS-C2023CEZZ	J	Fuse T2AL/250V	AD
R6371	VRS-CY1JF105J	J	1M 1/16W Metal Oxide	AA	J6301	QJAKL0002AJZZ	J	Jack, AV	AN
R6372	VRS-CY1JF105J	J	1M 1/16W Metal Oxide	AA	P701	QPLGZ1074GEZZ	J	Plug, 10pin (AC)	AC
R6373	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA	P702	QPLGN0247REZZ	J	Plug, 2pin (AL)	AA
R6378	VRS-CY1JF224J	J	220k 1/16W Metal Oxide	AA	P704	QPLGN0278GEZZ	J	Plug, 2pin (AB)	AA
R6379	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA	△ P901	QPLGN0269GEZZ	J	Plug, 2pin (AP)	AB
R6380	VRS-CY1JF750J	J	75 1/16W Metal Oxide	AA	P1401	QSOCN0794GEZZ	J	Socket, 7pin (AI)	AB
R6386	VRD-RA2EE181J	J	180 1/4W Carbon	AA	P1402	QSOCN0694GEZZ	J	Socket, 6pin (AJ)	AB
R6387	VRD-RA2EE151J	J	150 1/4W Carbon	AA	P6301	QPLGN0247REZZ	J	Plug, 2pin (AE)	AA
R6388	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA	SC701	QSOCN0694GEZZ	J	Socket, 6pin (AD)	AB
R6389	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA	P6302	QPLGN0578GEZZ	J	Plug, 5pin (AV)	AB
R6390	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA	SC201	QSOCZ1425CEZZ	J	Socket, 14pin (AX)	AD
R6391	VRD-RA2BE562J	J	5.6k 1/8W Carbon	AA	SC501	QSOCN1294GEZZ	J	Socket, 12pin (AZ)	AC
R6392	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide	AA				(VC-MH80)	
R6393	VRD-RA2BE102J	J	1k 1/8W Carbon	AA	SC702	QSOCN1294GEZZ	J	Socket, 12pin (AT)	AC
R6397	VRD-RA2BE683J	J	68k 1/8W Carbon	AA	SC1402	QSOCN0994GEZZ	J	Socket, 9pin (AO)	AC
R9902	VRD-RA2BE331J	J	330 1/8W Carbon	AA	SC1405	QSOCN0994GEZZ	J	Socket, 9pin (AQ)	AC
R9903	VRS-CY1JF391J	J	390 1/16W Metal Oxide	AA	SC1410	QSOCZ1312CEZZ	J	Socket, 13pin (FA)	AD
R9904	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA	SC1411	QSOCZ0512CEZZ	J	Socket, 5pin (FC)	AB
R9906	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA	SC6301	QSOCN0894GEZZ	J	Socket, 8pin (AG)	AC
R9907	VRD-RA2BE100J	J	10 1/8W Carbon	AA	SC6302	QSOCZ0825CEZZ	J	Socket, 8pin (AS)	AD
R9909	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA	TP2201	QPLGZ0352GEZZ	J	Test Point, 3pin	AA
R9910	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA	TP2204	QPLGZ0252GEZZ	J	Test Point, 2pin	AA
R9911	VRD-RA2BE271J	J	270 1/8W Carbon	AA	TP6301	QPLGZ0252GEZZ	J	Test Point, 2pin	AA
R9912	VRS-CY1JF103J	J	10k 1/16W Metal Oxide	AA	TP6303	QPLGZ0252GEZZ	J	Test Point, 2pin	AA
R9913	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA					
R9914	VRD-RA2BE181J	J	180 1/8W Carbon	AA					
R9915	VRD-RA2BE221J	J	220 1/8W Carbon	AA					
R9916	VRS-CY1JF100J	J	10 1/16W Metal Oxide	AA					
R9918	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA					
R9919	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA					
R9920	VRD-RA2BE223J	J	22k 1/8W Carbon	AA					
R9921	VRS-CY1JF220J	J	22 1/16W Metal Oxide	AA					
R9922	VRD-RA2HD100J	J	10 1/2W Carbon	AA					
R9924	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA					
R9925	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide	AA					
R9926	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA					
R9930	VRS-CY1JF124J	J	120k 1/16W Metal Oxide	AA					
R9931	VRS-CY1JF1R0J	J	1 1/16W Metal Oxide	AA					
R9932	VRD-RA2BE273J	J	27k 1/8W Carbon	AA					
R9933	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA					
R9934	VRD-RA2HD6R8J	J	6.8 1/2W Carbon	AA					
R9935	VRD-RA2HD6R8J	J	6.8 1/2W Carbon	AA					
R9938	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA					
R9939	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA					
MISCELLANEOUS PARTS									
△	QACCB5002AJZZ	V	AC Cord (VC-MH80)						
△	QACCV2005AJZZ	V	AC Cord (VC-MH90)	AM					
FB701	RBLN-0043CEZZ	J	Ferrite Bead	AB					
△ FB901	RBLN-0019CEZZ	J	Ferrite Bead	AB					
△ FB902	RBLN-0019CEZZ	J	Ferrite Bead	AB					
△ FH901	QFSDH1009CEZZ	J	Fuse Holder	AA					
△ FH902	QFSDH1010CEZZ	J	Fuse Holder	AA					

— End of Main —

Ref. No.	Part No.	★	Description	Code
DUNTK4950KE53				
TIMER UNIT				
INTEGRATED CIRCUIT				
IC5001	VH1MN12510F-1	J	FIP Driver	AM
DIODES				
D5002	RH-PX0204GEZZ	J	Photo Diode	AB
D5003	VHD1SS119//-1	J	1SS119	AB
D5004	VHD1SS119//-1	J	1SS119	AB
D5005	VHD1SS119//-1	J	1SS119	AB
D5006	VHD1SS119//-1	J	1SS119	AB
D5007	VHD1SS119//-1	J	1SS119	AB
D5010	RH-PX0204GEZZ	J	Photo Diode	AB
COIL				
FL5001	RFILC0115GEZZ	J	4MHz	AC
CAPACITORS				
C5001	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C5002	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB
C5003	VCKYPA1HF103Z	J	0.01 50V Ceramic	AA
C5004	VCKYD41HB151K	J	150p 50V Ceramic	AA
C5005	VCEAEA1CW226M	J	22 16V Electrolytic	AB
C5006	VCKYPA1HF103Z	J	0.01 50V Ceramic	AA
C5007	VCKYPA1HF103Z	J	0.01 50V Ceramic	AA
RESISTORS				
R5001	VRD-RA2BE104J	J	100k 1/8W Carbon	AA
R5002	VRD-RA2BE104J	J	100k 1/8W Carbon	AA
R5003	VRD-RA2BE104J	J	100k 1/8W Carbon	AA
R5004	VRD-RA2BE104J	J	100k 1/8W Carbon	AA
R5005	VRD-RA2BE104J	J	100k 1/8W Carbon	AA
R5006	VRD-RA2BE104J	J	100k 1/8W Carbon	AA
R5007	VRD-RA2EE1R8J	J	1.8 1/4W Carbon	AA
R5008	VRD-RA2BE471J	J	470 1/8W Carbon	AA
R5009	VRD-RA2BE471J	J	470 1/8W Carbon	AA
R5010	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R5011	VRD-RA2BE471J	J	470 1/8W Carbon	AA
R5012	VRD-RA2BE220J	J	22 1/8W Carbon	AA
R5013	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
MISCELLANEOUS PARTS				
DG5001	VVK11BMW5//-1	J	Fluorescent Display Tube	AW
TP5001	QPLGN0278GEZZ	J	Test Point, 2pin	AA
RMCS001	RRMCU0050GEZZ	J	R/C Receiver	AL
SC5001	QSOCN1295GEZZ	J	Socket, 12pin (TA)	AC
SC5002	QSOCN0794GEZZ	J	Socket, 7pin (TB)	AB
S5002	QSW-K0079GEZZ	J	Switch, CH (-)	AB
S5003	QSW-K0079GEZZ	J	Switch, CH (+)	AB

Ref. No.	Part No.	★	Description	Code
MISCELLANEOUS PARTS (Continued)				
S5004	QSW-K0079GEZZ	J	Switch, Pause	AB
S5005	QSW-K0079GEZZ	J	Switch, Eject	AB
S5007	QSW-K0079GEZZ	J	Switch, REC	AB
S5008	QSW-K0079GEZZ	J	Switch, Play	AB
S5009	QSW-K0079GEZZ	J	Switch, Stop	AB
S5010	QSW-K0079GEZZ	J	Switch, Timer	AB
S5015	QSW-K0079GEZZ	J	Switch, Power	AB
S5016	QSW-Z0069GEZZ	J	Switch, Shuttle	AM

— End of Timer Unit —

DUNTK4951KE52 (VC-MH80)

DUNTK4951KE51 (VC-MH90)

OPERATION UNIT

TRANSISTORS				
Q8802	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
Q8803	VSRN2403///-1	J	RN2403 (VC-MH80)	AB
Q8804	VS2SC2712Y/-1	J	2SC2712Y	AB
DIODES				
D8801	VHD1SS119//-1	J	1SS119 (VC-MH80)	AB
D8802	VHD1SS119//-1	J	1SS119 (VC-MH80)	AB
CONTROL				
R8803	RVR-B4262GEZZ	J	10k (B) P-Tone	AD
CAPACITORS				
C8802	VCKYD41HB331K	J	330p 50V Ceramic	AA
C8803	VCKYD41HB331K	J	330p 50V Ceramic	AA
C8804	VCKYD41HB102K	J	1000p 50V Ceramic	AA
RESISTORS				
R8801	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R8802	VRD-RA2BE822J	J	8.2k 1/8W Carbon	AA
R8804	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R8805	VRD-RA2BE750J	J	75 1/8W Carbon	AA
R8806	VRD-RA2BE472J	J	4.7k 1/8W Carbon	AA
R8807	VRD-RA2BE123J	J	12k 1/8W Carbon	AA
R8808	VRD-RA2BE123J	J	12k 1/8W Carbon	AA
R8809	VRD-RA2BE122J	J	1.2k 1/8W Carbon	AA
R8811	VRD-RA2BE122J	J	1.2k 1/8W Carbon	AA
			(VC-MH80)	
R8812	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
			(VC-MH80)	
R8813	VRD-RA2BE153J	J	15k 1/8W Carbon	AA
			(VC-MH80)	

VC-MH80
VC-MH90

Ref. No.	Part No.	★	Description	Code
MISCELLANEOUS PARTS				
J8801	QJAKG0020GEZZ	J	Jack, AV	AF
P8801	QPLGN0580GEZZ	J	Plug, 5pin (HC)	AB
SC8801	QSOCN0794GEZZ	J	Socket, 7pin (HA)	AB
SC8802	QSOCN0995GEZZ	J	Socket, 9pin (HD)	AC
S8801	QSW-K0079GEZZ	J	Switch, OSD (VC-MH80)	AB
S8801	QSW-K0079GEZZ	J	Switch, Menu (VC-MH90)	AB
S8803	QSW-K0079GEZZ	J	Switch, SP/LP, EP	AB
S8804	QSW-K0079GEZZ	J	Switch, Clear	AB
S8805	QSW-K0079GEZZ	J	Switch, CH (+)	AB
S8806	QSW-K0079GEZZ	J	Switch, Select (VC-MH80)	AB
S8806	QSW-K0079GEZZ	J	Switch, Next (VC-MH90)	AB
S8807	QSW-K0079GEZZ	J	Switch, Store	AB
S8808	QSW-K0079GEZZ	J	Switch, CH (-)	AB
S8809	QSW-K0079GEZZ	J	Switch, Select (VC-MH80)	AB
S8809	QSW-K0079GEZZ	J	Switch, Back (VC-MH90)	AB
S8811	QSW-S0249GEZZ	J	Switch, SECAM Mode (VC-MH80)	AE
S8812	QSW-S0245GEZZ	J	Switch, Colour Mode	AF

— End of Operation Unit —

DUNTK4956KE53 (VC-MH80)

OSD/SECAM-C UNIT

DUNTK4956KE50 (VC-MH90)

OSD/MPX UNIT

INTEGRATED CIRCUITS				
IC1603	VHiBA15218F1E	J	Amp (VC-MH90)	AF
IC1701	VHiAA7283G-1	J	NICAM Decoder (VC-MH90)	BC
IC5301	VHiM51646GP1E	J	SECAM Chroma (VC-MH80)	AQ
IC5901	RH-IX0845GEZZ	J	OSD	AR

TRANSISTORS

Q1701	VS2SC2735//1E	J	2SC2735 (VC-MH90)	AC
Q1702	VS2SA950Y//1	J	2SA950Y (VC-MH80)	AE
Q1703	VSDTC124EK/-1	J	DTC124EK (VC-MH80)	AB
Q5301	VS2SC2001LK-1	J	2SC2001LK (VC-MH80)	AA
Q5303	VS2SC1815YW-1	J	2SC1815YW (VC-MH80)	AC
Q5304	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
Q5901	VS2SA1162Y/-1	J	2SA1162	AB
Q5902	VS2SC2712Y/-1	J	2SC2712Y	AB
Q5903	VS2SA1162Y/-1	J	2SA1162	AB
Q5904	VSRN1404///-1	J	RN1404	AA
Q5905	VSRN1403///-1	J	RN1403	AA

Ref. No.	Part No.	★	Description	Code
DIODES				
D1601	RH-EX0632GEZZ	J	Zener Diode (VC-MH90)	AA
D1701	VHD1SS119//1	J	1SS119 (VC-MH90)	AB
D1720	VHDOF4076//1	J	OF4076 (VC-MH90)	AC
D5301	RH-EX0138GEZZ	J	Zener Diode (VC-MH80)	AA
D5901	VHD1SS119//1	J	1SS119	AB
D5902	VHD1SS119//1	J	1SS119	AB

PACKAGED CIRCUITS

FL5302	RMPTD0257GEZZ	J	Packaged Circuit	AD
X1701	RCRSB0183GEZZ	J	Crystal, 8.192MHz (VC-MH90)	AM
X5901	RCRSB0115GEZZ	J	Crystal	AF
X5902	RCRSB0172GEZZ	J	Crystal	AK

COILS

FL5303	RCiLV0105GEZZ	J	Filter (VC-MH80)	AE
FL5304	RCiLV0106GEZZ	J	Filter (VC-MH80)	AE
FL5305	RCiLV0104GEZZ	J	Filter (VC-MH80)	AE
FL5901	RFiLN0013GEZZ	J	Filter	AC
L1701	VP-ZK6R8K0000	J	6.8μH (VC-MH90)	AA
L1702	VP-ZK6R8K0000	J	6.8μH (VC-MH90)	AA
L1703	VP-ZK6R8K0000	J	6.8μH (VC-MH90)	AA
L1704	VP-XF6R8K0000	J	6.8μH (VC-MH90)	AB
L1705	VP-ZK6R8K0000	J	6.8μH (VC-MH90)	AA
L1706	VP-ZK6R8K0000	J	6.8μH (VC-MH90)	AA
L5302	VP-ZK391K0000	J	390μH (VC-MH80)	AC
L5303	VP-ZK391K0000	J	390μH (VC-MH80)	AC
L5304	VP-XF470K0000	J	47μH (VC-MH80)	AB
L5306	VP-XF390K0000	J	39μH (VC-MH80)	AB
L5901	VP-XF5R6K0000	J	5.6μH	AB
L5904	VP-DF101K0000	J	100μH	AB
L5911	VP-XF220K0000	J	22μH	AB
L5912	VP-MK100K0000	J	10μH	AB
L5913	VP-DF680K0000	J	68μH	AB

CAPACITORS

C1601	VCEAEA1EW106M	J	10 25V Electrolytic (VC-MH90)	AB
C1641	VCEAEA1HW105M	J	1.0 50V Electrolytic (VC-MH90)	AB
C1642	VCEAEA1CW106M	J	10 16V Electrolytic (VC-MH90)	AB
C1643	VCCCCY1HH470J	J	47p 50V Ceramic (VC-MH90)	AA
C1701	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH90)	AA
C1702	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH90)	AA
C1704	VCCCCY1HH391J	J	390p 50V Ceramic (VC-MH90)	AA
C1705	VCCCCY1HH100D	J	10p 50V Ceramic (VC-MH90)	AA

Ref. No.	Part No.	*	Description	Code
CAPACITORS (Continued)				
C1706	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1707	VCKYCY1EF104Z	J 0.1	25V Ceramic (VC-MH90)	AA
C1708	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1709	VCKYCY1CF334Z	J 0.33	16V Ceramic (VC-MH90)	AA
C1710	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1713	VCKYCY1EF104Z	J 0.1	25V Ceramic (VC-MH90)	AA
C1716	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1717	VCKYCY1CF334Z	J 0.33	16V Ceramic (VC-MH90)	AA
C1718	VCTYP A1EX223K	J 0.022	25V (VC-MH90)	AA
C1720	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1721	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH90)	AA
C1722	VCEAEA0JW476M	J 47	6.3V Electrolytic (VC-MH90)	AB
C1723	VCKYCY1HB221K	J 220p	50V Ceramic (VC-MH90)	AA
C1724	VCKYCY1EF104Z	J 0.1	25V Ceramic (VC-MH90)	AA
C1725	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1726	VCKYCY1EF104Z	J 0.1	25V Ceramic (VC-MH90)	AA
C1727	VCEAEA1HW105M	J 1.0	50V Electrolytic (VC-MH90)	AB
C1728	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH90)	AA
C1729	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1730	VCEAEA1HW334M	J 0.33	50V Electrolytic (VC-MH90)	AB
C1731	VCKYCY1EB223K	J 0.022	25V Ceramic (VC-MH90)	AA
C1732	VCCCCY1HH101J	J 100p	50V Ceramic (VC-MH90)	AA
C1733	VCCCCY1HH101J	J 100p	50V Ceramic (VC-MH90)	AA
C1734	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH90)	AA
C1735	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1736	VCEAEA1HW474M	J 0.47	50V Electrolytic (VC-MH90)	AB
C1737	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH90)	AA

Ref. No.	Part No.	*	Description	Code
CAPACITORS (Continued)				
C1738	VCEAEA1CW106M	J 10	16V Electrolytic (VC-MH90)	AB
C1739	VCKYCY1EF104Z	J 0.1	25V Ceramic (VC-MH90)	AA
C1740	VCEAEA0JW476M	J 47	6.3V Electrolytic (VC-MH90)	AB
C1748	VCEAEA0JW476M	J 47	6.3V Electrolytic (VC-MH90)	AB
C1749	VCEAEA1AW336M	J 33	10V Electrolytic (VC-MH90)	AB
C5301	VCEAGA1AW476M	J 47	10V Electrolytic (VC-MH80)	AA
C5304	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH80)	AA
C5305	VCEAGA1AW476M	J 47	10V Electrolytic (VC-MH80)	AA
C5306	VCKYCY1HF223Z	J 0.022	50V Ceramic (VC-MH80)	AB
C5307	VCKYCY1HF223Z	J 0.022	50V Ceramic (VC-MH80)	AB
C5308	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH80)	AA
C5309	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH80)	AA
C5310	VCKYD41HB101K	J 100p	50V Ceramic (VC-MH80)	AA
C5311	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH80)	AA
C5312	VCKYCY1EB103K	J 0.01	25V Ceramic (VC-MH80)	AA
C5313	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH80)	AA
C5315	VCEAGA1CW106M	J 10	16V Electrolytic (VC-MH80)	AA
C5316	VCKYCY1EB223K	J 0.022	25V Ceramic (VC-MH80)	AA
C5317	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH80)	AA
C5318	VCEAGA1AW476M	J 47	10V Electrolytic (VC-MH80)	AA
C5319	VCKYCY1HF223Z	J 0.022	50V Ceramic (VC-MH80)	AB
C5320	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH80)	AA
C5321	VCEAGA1HW475M	J 4.7	50V Electrolytic (VC-MH80)	AB
C5322	VCKYCY1HF103Z	J 0.01	50V Ceramic (VC-MH80)	AA
C5323	VCKYCY1EF104J	J 0.1	25V Ceramic (VC-MH80)	AA
C5324	VCCCCY1HH680J	J 68p	50V Ceramic (VC-MH80)	AA
C5325	VCCCCY1HH270J	J 27p	50V Ceramic (VC-MH80)	AA

VC-MH80
VC-MH90

Ref. No.	Part No.	★	Description	Code
CAPACITORS (Continued)				
C5326	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH80)	AA
C5328	VCCCCY1HH820J	J	82p 50V Ceramic (VC-MH80)	AA
C5329	VCCCCY1HH470J	J	47p 50V Ceramic (VC-MH80)	AA
C5330	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH80)	AA
C5335	VCCCCY1HH680J	J	68p 50V Ceramic (VC-MH80)	AA
C5336	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH80)	AA
C5337	VCKYCY1HF103Z	J	0.01 50V Ceramic (VC-MH80)	AA
C5901	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C5902	RTO-H1047GEZZ	J	Trimmer Capacitor	AC
C5904	VCCCPA1HH220J	J	22p 50V Ceramic	AA
C5905	VCFYSA1HB223J	J	0.022 50V M. Polyester	AA
C5906	VCE9EA1HW105M	J	1 50V Elect. (N.P)	AC
C5907	VCQYTA1HM682J	J	6800p 50V Mylar	AB
C5908	VCKYCY1HB102K	J	1000p 50V Ceramic	AA
C5909	VCEAEA1HW474M	J	0.47 50V Electrolytic	AB
C5910	VCKYCY1HB561K	J	560p 50V Ceramic	AA
C5911	VCEAEA1CW107M	J	100 16V Electrolytic	AC
C5912	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C5914	VCKYCY1HB102K	J	1000p 50V Ceramic	AA
C5915	VCFYSA1HB104J	J	0.1 50V M. Polyester	AB
C5919	VCEAEA1CW106M	J	10 16V Electrolytic	AB
C5920	VCEAEA1AW476M	J	47 10V Electrolytic	AB
C5923	VCEAEA1AW476M	J	47 10V Electrolytic	AB
C5924	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C5925	VCE9EA1CW106M	J	10 16V Elect. (N.P)	AC
C5926	VCKYCY1EB103K	J	0.01 25V Ceramic	AA
C5927	VCCCCY1HH180J	J	18p 50V Ceramic	AA
C5928	VCCCCY1HH180J	J	18p 50V Ceramic	AA
C5929	VCCCCY1HH330J	J	33p 50V Ceramic	AA
C5930	VCCCCY1HH180J	J	18p 50V Ceramic	AA
C5931	VCCCCY1HH180J	J	18p 50V Ceramic	AA
C5932	VCCCCY1HH330J	J	33p 50V Ceramic	AA
C5933	VCCCCY1HH101J	J	100p 50V Ceramic	AA
C5934	VCCCCY1HH151J	J	150p 50V Ceramic	AA
C5935	VCCCCY1HH151J	J	150p 50V Ceramic	AA
C5936	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C5937	VCEAEA1HW105M	J	1.0 50V Electrolytic	AB
C5979	VCCCCY1HH560J	J	56p 50V Ceramic	AA
C5981	VCCCD41HH100J	J	10p 50V Ceramic	AB

RESISTORS

R1642	VRS-CY1JF154J	J	150k 1/16W Metal Oxide AA (VC-MH90)
R1643	VRS-CY1JF272J	J	2.7k 1/16W Metal Oxide AA (VC-MH90)
R1644	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide AA (VC-MH90)

Ref. No.	Part No.	★	Description	Code
RESISTORS (Continued)				
R1650	VRG-SC2EB101J	J	100 1/4W Fuse Resistor AC (VC-MH90)	AC
R1701	VRS-CY1JF153J	J	15k 1/16W Metal Oxide AA (VC-MH90)	AA
R1702	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide AA (VC-MH90)	AA
R1703	VRS-CY1JF331J	J	330 1/16W Metal Oxide AA (VC-MH90)	AA
R1704	VRS-CY1JF100J	J	10 1/16W Metal Oxide AA (VC-MH90)	AA
R1705	VRS-CY1JF151J	J	150 1/16W Metal Oxide AA (VC-MH90)	AA
R1706	VRS-CY1JF101J	J	100 1/16W Metal Oxide AA (VC-MH90)	AA
R1707	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA (VC-MH90)	AA
R1710	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide AA (VC-MH90)	AA
R1711	VRS-CY1JF104J	J	100k 1/16W Metal Oxide AA (VC-MH90)	AA
R1712	VRS-CY1JF103J	J	10k 1/16W Metal Oxide AA (VC-MH90)	AA
R1713	VRS-CY1JF223J	J	22k 1/16W Metal Oxide AA (VC-MH90)	AA
R1714	VRS-CY1JF105J	J	1 M 1/16W Metal Oxide AA (VC-MH90)	AA
R1715	VRS-CY1JF684J	J	680k 1/16W Metal Oxide AA (VC-MH90)	AA
R1716	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA (VC-MH90)	AA
R1717	VRS-CY1JF683J	J	68k 1/16W Metal Oxide AA (VC-MH90)	AA
R1718	VRS-CY1JF683J	J	68k 1/16W Metal Oxide AA (VC-MH90)	AA
R1719	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA (VC-MH90)	AA
R1721	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide AA (VC-MH90)	AA
R5301	VRG-SC2EB3R3J	J	3.3 1/4W Fuse Resistor AB (VC-MH80)	AB
R5302	VRS-CY1JF271J	J	270 1/16W Metal Oxide AA (VC-MH80)	AA
R5303	VRS-CY1JF271J	J	270 1/16W Metal Oxide AA (VC-MH80)	AA
R5304	VRS-CY1JF470J	J	47 1/16W Metal Oxide AA (VC-MH80)	AA
R5311	VRS-CY1JF123J	J	12k 1/16W Metal Oxide AA (VC-MH80)	AA
R5312	VRS-CY1JF473J	J	47k 1/16W Metal Oxide AA (VC-MH80)	AA
R5313	VRS-CY1JF123J	J	12k 1/16W Metal Oxide AA (VC-MH80)	AA
R5314	VRS-CY1JF473J	J	47k 1/16W Metal Oxide AA (VC-MH80)	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RESISTORS (Continued)					MISCELLANEOUS PARTS				
R5315	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA (VC-MH80)		SC1701	QSOCN0794GEZZ	J	Socket, 7pin (NA) (VC-MH90)	AB
R5316	VRS-CY1JF471J	J	470 1/16W Metal Oxide AA (VC-MH80)		SC1702	QSOCN0694GEZZ	J	Socket, 6pin (NB) (VC-MH90)	AB
R5317	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide AA (VC-MH80)		SC5301	QSOCN1294GEZZ	J	Socket, 12pin (ZA) (VC-MH80)	AC
R5318	VRD-RA2BE681J	J	680 1/8W Carbon AA (VC-MH80)		SC5901	QSOCN0994GEZZ	J	Socket, 9pin (OA)	AC
R5319	VRS-CY1JF471J	J	470 1/16W Metal Oxide AA (VC-MH80)		— End of OSD/SECAM-C/MPX Unit —				
R5321	VRS-CY1JF121J	J	120 1/16W Metal Oxide AA (VC-MH80)		DUNTK4957KE52 (VC-MH80) DUNTK4957KE50 (VC-MH90) IF UNIT				
R5322	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide AA (VC-MH80)		INTEGRATED CIRCUIT				
R5323	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide AA (VC-MH80)		IC1501	VHILA7577N/-1	J	IF Multi	AL
R5324	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA (VC-MH80)		TRANSISTORS				
R5325	VRS-CY1JF182J	J	1.8k 1/16W Metal Oxide AA (VC-MH80)		Q1501	VS2SC2712Y/-1	J	2SC2712Y	AB
R5326	VRS-CY1JF121J	J	120 1/16W Metal Oxide AA (VC-MH80)		Q1502	VS2SC2712Y/-1	J	2SC2712Y	AB
R5327	VRS-CY1JF681J	J	680 1/16W Metal Oxide AA (VC-MH80)		Q1504	VS2SC2712Y/-1	J	2SC2712Y	AB
R5328	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA (VC-MH80)		Q1505	VS2SC2712Y/-1	J	2SC2712Y	AB
R5331	VRS-CY1JF123J	J	12k 1/16W Metal Oxide AA (VC-MH80)		Q1506	VS2SC2712Y/-1	J	2SC2712Y	AB
R5332	VRS-CY1JF123J	J	12k 1/16W Metal Oxide AA (VC-MH80)		Q1507	VS2SC2712Y/-1	J	2SC2712Y	AB
R5333	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide AA (VC-MH80)		Q1508	VS2SC2712Y/-1	J	2SC2712Y	AB
R5901	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA		Q1509	VS2SC2712Y/-1	J	2SC2712Y	AB
R5902	VRS-CY1JF103J	J	10k 1/16W Metal Oxide AA		Q1510	VS2SC2735//1E	J	2SC2735	AC
R5903	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide AA		Q1511	VS2SC2712Y/-1	J	2SC2712Y	AB
R5904	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA		Q1512	VS2SC2735//1E	J	2SC2735	AC
R5905	VRS-CY1JF563J	J	56k 1/16W Metal Oxide AA		Q1513	VS2SC2712Y/-1	J	2SC2712Y	AB
R5907	VRS-CY1JF103J	J	10k 1/16W Metal Oxide AA		Q1514	VS2SC2712Y/-1	J	2SC2712Y	AB
R5908	VRS-CY1JF473J	J	47k 1/16W Metal Oxide AA		Q1515	VSRN1404///-1	J	RN1404 (VC-MH80)	AA
R5909	VRS-CY1JF223J	J	22k 1/16W Metal Oxide AA		Q1516	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
R5910	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA		Q1519	VSRN1404///-1	J	RN1404	AA
R5921	VRS-CY1JF393J	J	39k 1/16W Metal Oxide AA		Q1520	VS2SC2712Y/-1	J	2SC2712Y (VC-MH80)	AB
R5922	VRS-CY1JF103J	J	10k 1/16W Metal Oxide AA		COILS AND TRANSFORMERS				
R5923	VRS-CY1JF104J	J	100k 1/16W Metal Oxide AA		FL1501	RFILC0084CEZZ	J	STF 6.0MA	AF
R5924	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA		FL1502	RFILC0317CEZZ	J	TPS 6.0MJ (VC-MH80)	AE
R5925	VRD-RA2BE182J	J	1.8k 1/8W Carbon AA		FL1503	RFILC0024CEZZ	J	6.5MB2	AE
R5926	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide AA		FL1504	RFILC0023CEZZ	J	6.0MB2	AE
R5927	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide AA		FL1505	RFILC0020CEZZ	J	5.5MB2	AE
R5929	VRS-CY1JF222J	J	2.2K 1/16W Metal Oxide AA		FL1506	RFILC0013CEZZ	J	4.5MB2	AE
R5930	VRS-CY1JF222J	J	2.2K 1/16W Metal Oxide AA		L1501	VP-DF221K0000	J	220μH	AB
R5963	VRS-CY1JF101J	J	100 1/16W Metal Oxide AA		L1502	VP-DF221K0000	J	220μH	AB
R5964	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide AA		L1503	VP-XF150K0000	J	15μH	AB
					L1504	VP-XF4R7K0000	J	4.7μH (VC-MH80)	AB
					L1504	VP-XF3R3K0000	J	3.3μH (VC-MH90)	AB
					L1505	VP-XF100K0000	J	10μH	AB
					L1506	VP-XF330K0000	J	33μH	AB
					L1507	VP-XF100K0000	J	10μH	AB

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
COILS AND TRANSFORMERS (Continued)					CAPACITORS (Continued)				
L1508	VP-XF100K0000	J	10μH	AB	C1526	VCCCCY1HH270J	J	27p 50V Ceramic	AA
L1509	VP-XF100K0000	J	10μH	AB	C1527	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
L1510	VP-XF270K0000	J	27μH	AB	C1528	VCKYCY1CF683Z	J	0.068 16V Ceramic	AA
L1515	VP-XF3R9K0000	J	3.9μH	AB	C1529	VCCCCY1HH390J	J	39p 50V Ceramic	AA
L1516	VP-XF5R6K0000	J	5.6μH (VC-MH90)	AB	C1530	VCE9EA1CW226M	J	22 16V Elect. (N.P)	AC
L1517	VP-XF1R8K0000	J	1.8μH	AB	C1531	VCCCCY1HH270J	J	27p 50V Ceramic	AA
L1518	VP-XF1R2K0000	J	1.2μH	AB	C1535	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
L1519	VP-ZK470K0000	J	47μH	AB	C1537	VCCCCY1HH101J	J	100p 50V Ceramic	AA
L1520	VP-XFR56K0000	J	0.56μH	AB	C1538	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
L1521	VP-DF102K0000	J	1mH	AB	C1539	VCEAEA1HW474M	J	0.47 50V Electrolytic	AB
SF1501	RFiLC0130GEZZ	J	Filter	AK	C1541	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
SF1502	RFiLC0129GEZZ	J	Filter (VC-MH80)	AK	C1542	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
SF1502	RFiLC0140GEZZ	J	Filter (VC-MH90)	AK	C1543	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
SF1503	RFiLC0141GEZZ	J	Filter (VC-MH90)	AK	C1544	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
T1501	RCiLD0061GEZZ	J	VCO Adj.	AD	C1545	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
T1502	RCiLD0063GEZZ	J	SIF Adj.	AD				(VC-MH90)	
T1503	RCiLD0062GEZZ	J	ATF Adj.	AD	C1546	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
PACKAGED CIRCUITS					C1547	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
X1501	RFiLA0028GEZZ	J	Filter, 1.5MHz	AG	C1548	VCEAEA1CW476M	J	47 16V Electrolytic	AB
X1502	RFiLA0027GEZZ	J	Filter, 0.5MHz	AD	C1549	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
CONTROLS					C1550	VCCCCY1HH820J	J	82p 50V Ceramic	AA
R1550	RVR-M4813GEZZ	J	22k (B) RF AGC Adj.	AC	C1551	VCCCCY1HH180J	J	18p 50V Ceramic	AA
R1582	RVR-M4809GEZZ	J	4.7k (B) Audio Out Adj.	AC	C1555	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
CAPACITORS					C1556	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1501	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C1557	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C1502	VCEAEA1CW476M	J	47 16V Electrolytic	AB	C1558	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1503	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C1559	VCE9EA1CW106M	J	10 16V Elect. (N.P)	AC
C1504	VCEAEA1CW476M	J	47 16V Electrolytic	AB	C1560	VCEAEA1CW476M	J	47 16V Electrolytic	AB
C1505	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	C1561	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1506	VCCCCY1HH820J	J	82p 50V Ceramic	AA	C1562	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA
C1507	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	RESISTORS				
C1508	VCCCCY1HH101J	J	100p 50V Ceramic	AA	R1501	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
C1509	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	R1502	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
			(VC-MH80)		R1503	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
C1511	VCEAEA1CW106M	J	10 16V Electrolytic	AB				(VC-MH80)	
C1512	VCKYCY1HB152K	J	1500p 50V Ceramic	AA	R1504	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
C1513	VCCCCY1HH471J	J	470p 50V Ceramic	AA	R1505	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
C1514	VCFYSA1HB224J	J	0.22 50V M. Polyester	AB	R1506	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
C1515	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	R1507	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
C1516	VCCCCY1HH221J	J	220p 50V Ceramic	AA	R1508	VRS-CY1JF822J	J	8.2k 1/16W Metal Oxide	AA
C1517	VCKYCY1HB561K	J	560p 50V Ceramic	AA				(VC-MH80)	
C1518	VCKYCY1HB561K	J	560p 50V Ceramic	AA	R1509	VRS-CY1JF104J	J	100k 1/16W Metal Oxide	AA
C1519	VCCCCY1HH220J	J	22p 50V Ceramic	AA				(VC-MH80)	
C1520	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	R1510	VRS-CY1JF273J	J	27k 1/16W Metal Oxide	AA
C1521	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	R1511	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA
C1522	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	R1512	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA
C1523	VCKYCY1CF224Z	J	0.22 16V Ceramic	AA	R1513	VRS-CY1JF561J	J	560 1/16W Metal Oxide	AA
C1524	VCCCCY1HH820J	J	82p 50V Ceramic	AA	R1514	VRD-RA2BE332J	J	3.3k 1/8W Carbon	AA
C1525	VCEAEA1HW474M	J	0.47 50V Electrolytic	AB	R1515	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
					R1516	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
					R1517	VRS-CY1JF101J	J	100 1/16W Metal Oxide	AA
					R1518	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
					R1519	VRS-CY1JF821J	J	820 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
RESISTORS (Continued)					RESISTORS (Continued)				
R1520	VRS-CY1JF561J	J	560 1/16W Metal Oxide AA		R1591	VRS-CY1JF103J	J	10k 1/16W Metal Oxide AA	
R1521	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide AA		R1592	VRS-CY1JF100J	J	10 1/16W Metal Oxide AA	
R1523	VRS-CY1JF561J	J	560 1/16W Metal Oxide AA (VC-MH80)		MISCELLANEOUS PARTS				
R1524	VRS-CY1JF821J	J	820 1/16W Metal Oxide AA		P1501	QPLGN1386CEZZ	J	Plug, 13pin (FA)	AD
R1526	VRS-CY1JF332J	J	3.3k 1/16W Metal Oxide AA		P1502	QPLGN0586CEZZ	J	Plug, 5pin (FC)	AC
R1527	VRS-CY1JF470J	J	47 1/16W Metal Oxide AA		— End of IF Unit —				
R1528	VRS-CY1JF680J	J	68 1/16W Metal Oxide AA		DUNTK4958KE50 REC TIP UNIT				
R1529	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA		MISCELLANEOUS PARTS				
R1530	VRS-CY1JF561J	J	560 1/16W Metal Oxide AA		S701	QSW-F0042AJZZ	V	Switch, REC Tip	AG
R1531	VRS-CY1JF271J	J	270 1/16W Metal Oxide AA		P801	QPLGN0278GEZZ	J	Plug, 2pin (EA)	AA
R1532	VRS-CY1JF103J	J	10k 1/16W Metal Oxide AA		— End of Rec Tip Unit —				
R1533	VRS-CY1JF271J	J	270 1/16W Metal Oxide AA		DUNTK4998KE50 HEAD AMP UNIT				
R1534	VRS-CY1JF332J	J	3.3k 1/16W Metal Oxide AA		INTEGRATED CIRCUITS				
R1536	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide AA		IC301	VH1EA5705/-1	J	Video H/A	AL
R1537	VRS-CY1JF181J	J	180 1/16W Metal Oxide AA		IC6401	VH1AN3317SB-1	J	Audio H/A	AH
R1538	VRS-CY1JF471J	J	470 1/16W Metal Oxide AA		TRANSISTORS				
R1539	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide AA		Q361	VSRN1404///-1	J	RN1404	AA
R1540	VRS-CY1JF104J	J	100k 1/16W Metal Oxide AA		Q362	VSRN1404///-1	J	RN1404	AA
R1541	VRS-CY1JF104J	J	100k 1/16W Metal Oxide AA		Q363	VSRN1404///-1	J	RN1404	AA
R1543	VRS-CY1JF824J	J	820k 1/16W Metal Oxide AA		Q364	VSRN1404///-1	J	RN1404	AA
R1551	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide AA		Q6401	VS2SC2712Y/-1	J	2SC2712Y	AB
R1552	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide AA		Q6402	VS2SC2712Y/-1	J	2SC2712Y	AB
R1553	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide AA		DIODES				
R1554	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide AA		D301	VHDDAP202K/-1	J	DAP202K	AB
R1555	VRS-CY1JF561J	J	560 1/16W Metal Oxide AA (VC-MH90)		D330	VHDDAP202K/-1	J	DAP202K	AB
R1556	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA		D332	VHD1SS119// -1	J	1SS119	AB
R1557	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide AA		D6401	VHD1SS119// -1	J	1SS119	AB
R1558	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide AA		COILS				
R1559	VRS-CY1JF681J	J	680 1/16W Metal Oxide AA		L301	VP-ZK101K0000	J	100μH	AB
R1560	VRS-CY1JF390J	J	39 1/16W Metal Oxide AA		L302	VP-ZK101K0000	J	100μH	AB
R1561	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide AA		L6401	VP-ZK101K0000	J	100μH	AB
R1562	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide AA		CAPACITORS				
R1563	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide AA		C301	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB
R1564	VRS-CY1JF152J	J	1.5k 1/16W Metal Oxide AA						
R1565	VRS-CY1JF821J	J	820 1/16W Metal Oxide AA						
R1566	VRS-CY1JF180J	J	18 1/16W Metal Oxide AA						
R1567	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide AA						
R1568	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide AA						
R1569	VRS-CY1JF392J	J	3.9k 1/16W Metal Oxide AA						
R1570	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide AA						
R1571	VRS-CY1JF221J	J	220 1/16W Metal Oxide AA						
R1572	VRS-CY1JF221J	J	220 1/16W Metal Oxide AA						
R1573	VRS-CY1JF151J	J	150 1/16W Metal Oxide AA						
R1574	VRS-CY1JF561J	J	560 1/16W Metal Oxide AA						
R1575	VRS-CY1JF182J	J	1.8k 1/16W Metal Oxide AA						
R1580	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide AA						
R1581	VRS-CY1JF183J	J	18k 1/16W Metal Oxide AA						
R1583	VRS-CY1JF222J	J	2.2k 1/16W Metal Oxide AA						
R1584	VRS-CY1JF473J	J	47k 1/16W Metal Oxide AA						
R1585	VRS-CY1JF563J	J	56k 1/16W Metal Oxide AA						
R1586	VRS-CY1JF102J	J	1k 1/16W Metal Oxide AA						
R1590	VRS-CY1JF103J	J	10k 1/16W Metal Oxide AA						

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
CAPACITORS (Continued)					RESISTORS (Continued)				
C302	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB	R330	VRS-CY1JF223J	J	22k 1/16W Metal Oxide	AA
C303	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA	R331	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
C304	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA	R332	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide	AA
C305	VCCCCY1HH330J	J	33p 50V Ceramic	AA	R333	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
C306	VCCCCY1HH330J	J	33p 50V Ceramic	AA	R334	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide	AA
C307	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB	R335	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
C308	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB	R363	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
C309	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB	R365	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
C310	VCKYCY1CF334Z	J	0.33 16V Ceramic	AA	R370	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA
C311	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB	R371	VRS-CY1JF470J	J	47 1/16W Metal Oxide	AA
C312	VCKYD41CY103N	J	0.01 16V Ceramic	AA	R6401	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
C314	VCEAEA1CW476M	J	47 16V Electrolytic	AB	R6402	VRS-CY1JF181J	J	180 1/16W Metal Oxide	AA
C315	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	R6403	VRS-CY1JF331J	J	330 1/16W Metal Oxide	AA
C330	VCCCCY1HH330J	J	33p 50V Ceramic	AA	R6404	VRS-CY1JF100J	J	10 1/16W Metal Oxide	AA
C331	VCCCCY1HH330J	J	33p 50V Ceramic	AA	R6405	VRS-CY1JF100J	J	10 1/16W Metal Oxide	AA
C332	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA	R6406	VRS-CY1JF562J	J	5.6k 1/16W Metal Oxide	AA
C333	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA	R6407	VRS-CY1JF153J	J	15k 1/16W Metal Oxide	AA
C334	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB	R6408	VRS-CY1JF122J	J	1.2k 1/16W Metal Oxide	AA
C335	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB	R6409	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA
C336	VCKYCY1HF223Z	J	0.022 50V Ceramic	AB	R6410	VRS-CY1JF183J	J	18k 1/16W Metal Oxide	AA
C337	VCKYCY1HB102K	J	1000p 50V Ceramic	AA	R6411	VRS-CY1JF334J	J	330k 1/16W Metal Oxide	AA
C338	VCKYCY1HB472K	J	4700p 50V Ceramic	AA	R6412	VRS-CY1JF473J	J	47k 1/16W Metal Oxide	AA
C339	VCKYCY1HB102K	J	1000p 50V Ceramic	AA	R6413	VRD-RA2BE473J	J	47k 1/8W Carbon	AA
C340	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	R6420	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
C361	VCCCCY1HH331J	J	330p 50V Ceramic	AA	R6421	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA
C362	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	R6422	VRS-CY1JF472J	J	4.7k 1/16W Metal Oxide	AA
C6401	VCEAEA1HW105M	J	1.0 50V Electrolytic	AB	R6423	VRS-CY1JF563J	J	56k 1/16W Metal Oxide	AA
C6402	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	MISCELLANEOUS PARTS				
C6403	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	P301	QPLGZ1426CEZZ	J	Plug, 14pin (XA)	AE
C6404	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	P302	QPLGZ0826CEZZ	J	Plug, 8pin (XB)	AD
C6405	VCEAEA1HW105M	J	1.0 50V Electrolytic	AB	P303	QPLGN0229TAZZ	J	Plug, 2pin (TP301)	AB
C6406	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA	SC301	QSOCN1194REZZ	J	Socket, 11pin (XC)	AF
C6407	VCEAEA0JW476M	J	47 6.3V Electrolytic	AB					
C6408	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
C6409	VCEAEA1HW225M	J	2.2 50V Electrolytic	AB					
C6410	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
C6411	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
C6412	VCEAEA1HW105M	J	1.0 50V Electrolytic	AB					
C6413	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
C6414	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
C6415	VCKYCY1EF104Z	J	0.1 25V Ceramic	AA					
C6420	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
C6421	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
C6422	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
C6423	VCKYCY1HF103Z	J	0.01 50V Ceramic	AA					
RESISTORS									
R301	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA					
R302	VRS-CY1JF681J	J	680 1/16W Metal Oxide	AA					
R303	VRS-CY1JF102J	J	1k 1/16W Metal Oxide	AA					
R304	VRD-RA2BE223J	J	22k 1/8W Carbon	AA					
R305	VRS-CY1JF333J	J	33k 1/16W Metal Oxide	AA					
R306	VRS-CY1JF154J	J	150k 1/16W Metal Oxide	AA					
R307	VRS-CY1JF100J	J	10 1/16W Metal Oxide	AA					

— End of Head Amp Unit —

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
MECHANISM CHASSIS PARTS					45	MLEVF0422GEZZ	J	Supply Loading Arm Ass'y	AE
1	LCHSM0148GEZZ	J	Main Chassis Ass'y	AX	46	CLEVP0239GE00	J	Auto Head Cleaner Ass'y	AD
2	NROLP0084GEZZ	J	Supply Impedance Roller	AC	47	MSPRT0379GEFJ	J	Loading Double Action Spring	AB
3	PGIDH0031GEFW	J	Supply Impedance Roller Frange	AA	48	NDAIV1065GE00	J	Reel Disk	AC
4	PGIDS0027GEZZ	J	Supply Impedance Roller Lower Frange	AA	49	MARMP0053GEZZ	J	Reel Idler	AH
5	NSFTL0563GEFW	J	Supply Impedance Roller Inner	AC	50	MLEVP0240GEZZ	J	Clutch Lever	AA
6	LPOLM0050GEZZ	J	Supply Pole Base Ass'y	AM	51	NGERH1221GEZZ	J	Clutch Gear Ass'y	AH
7	LPOLM0051GEZZ	J	Take-Up Pole Base Ass'y	AM	52	NPLYV0147GEZZ	J	Reel Pulley Ass'y	AK
8	NROLP0110GEZZ	J	Guide Roller	AH	53	NGERH1224GEZZ	J	Playback Gear	AD
9	MLEVF0414GEZZ	J	Reverse Guide Lever Ass'y	AE	54	MLEVP0241GEZZ	J	Clutch Connect Arm	AB
10	MSPRD0147GEFJ	J	Reverse Guide Spring	AB	55	MLEVP0252GEZZ	J	Take-Up Main Brake Ass'y	AG
11	PSPAZ0391GEZZ	J	Reverse Guide Spacer	AB	56	MLEVP0249GEZZ	J	Take-Up Lock Lever	AB
12	RHEDU0083GEZZ	J	Audio/Control Head	AR	57	MLEVP0253GEZZ	J	Supply Main Brake Lever Ass'y	AE
13	MLEVF0415GEFW	J	Audio/Control Head Arm	AC	58	MSPRT0380GEFJ	J	Main Brake Spring	AB
14	MSPRD0148GEFJ	J	Audio/Control Head Arm Spring	AB	59	NGERH1225GEZZ	J	Cassette Housing Control Drive Gear	AB
15	MSPRC0189GEFJ	J	Azimuth Spring	AB	60	PREFL1004GEZZ	J	Light Guide	AE
16	RHEDT0032GEZZ	J	Full Erase Head	AK	61	MLEVP0250GEZZ	J	Slow Brake Ass'y	AD
17	PSPAZ0392GEZZ	J	Audio/Control Head Arm Spacer	AB	62	MSPRT0383GEFJ	J	Slow Brake Spring	AB
18	QPWBF4735GEZZ	J	Audio/Control Head PWB	AC	63	RMOTN2052GEZZ	J	Capstan Motor	BD
19	QSOCN0885REZZ	J	Socket, 8 pin	AB	64	RMOTM1049GEZZ	J	Loading Motor	AM
20	NBLTK0065GE00	J	Reel Belt	AC	65	QCNW-7501GEZZ	J	Lead Wire for Loading Motor	AD
21	MLEVF0416GEZZ	J	Pinch Roller Lever Ass'y	AU	66	QCNW-7571GEZZ	J	FFC for Audio/Control	AG
22	MLEVP0237GEZZ	J	Pinch Double Action Lever	AB	67	QCNW-7502GEZZ	J	FFC for Drum Motor	AF
23	MLEVF0417GEZZ	J	Pinch Drive Lever Ass'y	AH	70	PGIDC0052GEFW	J	Drum Base	AK
24	NGERH1216GEZZ	J	Pinch Drive Cam	AD	71	XBPSD30P08J00	J	Drum Base Mounting Screw (SW3P + 8S)	AA
25	MLEVP0238GEZZ	J	Open Lever	AB	72	QBRSK0034GEZZ	J	Drum Earth Brush	AD
26	MSPRT0377GEFJ	J	Pinch Double Action Spring	AB	73	MSPRC0194GEFJ	J	Drum Earth Brush Spring	AA
27	MSPRD0149GEFJ	J	Earth Spring	AB	74	RMOTP1116GEZZ	J	Drum Drive Motor	BF
28	MLEVF0418GEZZ	J	Tension Arm Ass'y	AE	75	XBPSD26P06J00	J	Drum Drive Motor Mounting Screw (SW2.6P + 6S)	AA
29	LBOSZ1001GEZZ	J	Tension Arm Boss	AC	76	DDRMW0016HE04	J	Drum Ass'y	BV
30	MSPRT0378GEFJ	J	Tension Spring	AC	78	PCAPS1026GEZZ	J	Worm Adjuster	AB
31	LBNDK1008GEZZ	J	Tension Band Ass'y	AE					
32	NSFTP0032GEZZ	J	Tension Pole Adjust Cam	AA					
33	NGERH1217GE00	J	Master Cam	AC					
34	NPLYV0146GEZZ	J	Motor Pulley	AA					
35	NGERW1053GEZZ	J	Worm Gear	AC					
36	NGERW1052GEZZ	J	Worm Wheel Gear	AA					
37	NGERH1218GEZZ	J	Connect Gear	AC					
38	LANGK0161GEZZ	J	Loading Motor Angle Ass'y	AD					
39	NBRGP0023GEZZ	J	Bearing	AC					
40	MSLIP0006GEZZ	J	Sifter	AF					
41	MLEVF0419GEZZ	J	Sifter Drive Lever Ass'y	AC					
42	NGERH1219GEZZ	J	Take-Up Loading Gear	AB					
43	MLEVF0420GEZZ	J	Take-Up Loading Arm Ass'y	AE					
44	NGERH1220GEZZ	J	Supply Loading Gear	AC					

— End of Mechanism Chassis Parts —

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
CASSETTE HOUSING CONTROL PARTS					SCREWS, NUTS AND WASHERS				
300	CHLDX3070GE00	J	Cassette Housing Control Ass'y	AU	200	LX-XZ3030GEFD	J	Set Screw	AC
301	LHLDX1024GE00	J	Frame (L)	AG	201	LX-BZ3095GEFD	J	Audio/Control Head Screw	AA
302	LHLDX1025GE00	J	Frame (R)	AG	202	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
303	NGERR3003GEFW	J	Drive Angle	AC	203	XBPSD26P06000	J	Azimuth Adjusting Screw (2.6P + 6S)	AA
304	NGERR1005GEZZ	J	Double Action Rack	AB	204	XHPSD26P08WS0	J	Screw, C2.6P + 8S (For FE Head)	AA
305	MSPRT0381GEFJ	J	Double Action Spring	AB	206	XBPSD30P04J00	J	Screw, SW3P + 4S (For Loading Motor)	AA
306	MSLIF0070GEFW	J	Slider	AH	207	XHPSD26P06000	J	Screw, 2.6P + 6S (For Capstan Motor)	AA
307	LHLDX1026GE00	J	Holder (L)	AD	208	XHPSD26P06WS0	J	Screw, C2.6P + 6S (For Loading Motor Angle Ass'y)	AA
308	MLEVP0246GE00	J	Proof Lever (L)	AA	209	XHPSD30P08WS0	J	Screw, C3P + 8S (For Drum Base)	AA
309	MSPRD0150GEFJ	J	Proof Lever (L) Spring	AB	210	LX-NZ3046GEFW	J	X-Position Adjusting Nut	AB
310	LHLDX1027GE00	J	Holder (R)	AD	211	LX-NZ3019GEZZ	J	Reverse Guide Adjusting Nut	AB
311	MSPRP0159GEFJ	J	Cassette Spring	AD	212	XNFSD40-31000	J	Audio/Control Head Adjusting Nut (M4)	AB
312	MLEVF0424GEFW	J	Proof Lever (R)	AB	213	XNFSD20-16000	J	S.I. Roller Adjusting Nut (M2)	AA
313	MSPRD0151GEFJ	J	Proof Lever (R) Spring	AB	214	XWHJZ52-05110	J	Washer, W5.2P-11-0.5 (Reel Height Adj.)	AB
314	NGERH1226GE00	J	Drive Gear (L)	AB	215	XWHJZ52-03110	V	Washer, W5.2P-11-0.3 (Reel Height Adj.)	AB
315	MSPRD0152GEFJ	J	Drive Gear (L) Spring	AB	216	XWHJZ52-04110	V	Washer, W5.2P-11-0.4 (Reel Height Adj.)	AB
316	NGERH1227GE00	J	Drive Gear (R)	AC	217	XWHJZ52-06110	V	Washer, W5.2P-11-0.6	AB
317	MSPRD0153GEFJ	J	Drive Gear (R) Spring	AB	218	XWHJZ52-07110	V	Washer, W5.2P-11-0.7	AB
318	NGERH1228GE00	J	Synchro Gear	AA	219	XWHJZ31-02070	J	Washer, W3.1P-7-0.25	AA
319	NSFTD0036GEFD	J	Main Shaft	AD	220	LX-WZ1073GE00	J	Cut Washer, CW4.5P-11-0.5	AB
320	LANGF9570GEFW	J	Upper Plate	AH	221	LX-WZ1006GE00	J	Cut Washer, CW2.6P-5.4-0.5	AA
321	MLEVP0247GE00	J	Door Open Lever	AB	222	LX-WZ1041GE00	J	Cut Washer, CW2.6P-6-0.5	AA
322	MLEVP0248GE00	J	Sensor Lever	AA	223	XRESJ40-06000	J	E-Ring, E-4	AA
323	MSPRT0382GEFJ	J	Sensor Lever Spring	AB	232	LX-HZ3056GEFD	J	Screw, S3P + 10S + W6 + SW	AA
324	XHPSD30P06WS0	J	C3P + 6S (for Cassette Housing Control)	AA	233	LX-BZ3064GEFN	J	Screw, SW3P + 6S-Ni	AA

— End of Cassette Housing Control Parts —

— End of Screws, Nuts and Washers —

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
MECHANICAL PARTS					FRONT PANEL PARTS				
601	LX-HZ3040GEFF	J	Screw	AA	501	CPNLC1915GE01	J	Front Panel Ass'y (VC-MH80)	BB
602	LX-HZ3047GEFF	J	Screw	AA	501	CPNLC1915GE02	J	Front Panel Ass'y (VC-MH90)	BB
603	XEBSD30P12000	J	Screw	AA	501-1	CDORF2209GE01	J	Door Ass'y (VC-MH80)	AN
604	XEBSD40P12000	J	Screw	AA	501-1	CDORF2210GE01	J	Door Ass'y (VC-MH90)	AN
605	XEBSD30P10000	J	Screw	AA	501-1-2	HBDGB3019GESB	J	Badge "SHARP"	AG
606	XESSF30P12000	J	Screw	AA	501-1-3	TLABH0534GEZZ	J	Tuning Label	AB
607	XHPSD30P06WS0	J	Screw	AA	501-1-4	TLABZ1143GEZZ	J	Feature Label (VC-MH80)	AE
608	XHPSD30P08JS0	J	Screw	AA	501-1-4	TLABZ1144GEZZ	J	Feature Label (VC-MH90)	AE
609	LX-NZ3050GEFD	J	Nut	AA	501-2	CBTN-2589GE02	J	Power/Eject Button Ass'y AD	
610	GCABA3094GES P	J	Top Cabinet	AR	501-2-2	GCOVA1838GEZZ	J	Power LED Cover	AC
611	GCABB1148GEZZ	J	Main Frame	AT	501-3	GCOVA1837GEZZ	J	R/C Receiver Cover	AC
612	TLABM2871GEZZ	J	Model Label (VC-MH80)	AC	501-4	GCOVA1839GEZZ	J	Timer LED Cover	AC
612	TLABM2870GEZZ	J	Model Label (VC-MH90)	AC	501-6	GMADI0206GES A	J	Display Window	AF
613	GBDYU3093GEZZ	J	Bottom Plate	AF	501-7	HDECQ1268GES A	J	Cassette Flap (VC-MH80)	AL
614	GCOVA1855GEZZ	J	Antenna Terminal Cover	AH	501-7	HDECQ1269GES A	J	Cassette Flap (VC-MH90)	AL
615	LANGK0165GEFW	J	Top Cabinet Fixing Angle	AC	501-8	MSPRD0123GEF J	J	Cassette Flap Spring	AA
616	LANGK0166GEFW	J	Mechanism Chassis Fixing Angle	AC	501-9	HDECQ1156GESE	J	Cassette Decoration (R) (VC-MH80)	AD
617	LHLDF1087GEZZ	J	Sub PWB Holder	AD	501-9	HDECQ1156GES A	J	Cassette Decoration (R) (VC-MH90)	AD
618	LHLHZ1912GEZZ	J	Head Amp Holder	AD	501-10	HDECQ1155GESE	J	Cassette Decoration (L) (VC-MH80)	AD
619	LHLHZ1928GEZZ	J	Converter Holder	AD	501-10	HDECQ1155GES A	J	Cassette Decoration (L) (VC-MH90)	AD
620	PSPAZ0470GEZZ	J	Spacer	AC	501-11	HDECQ1157GESD	J	Decoration (Leg) (VC-MH80)	AH
621	NSFTZ0187GEFD	J	Mechanism Chassis Attaching Shaft	AF	501-11	HDECQ1157GES A	J	Decoration (Leg) (VC-MH90)	AH
622	LHLDP1146GEZZ	J	Power LED Holder	AC	501-12	HINDP2022GES A	J	Indication Plate (Inside the door) (VC-MH80)	AH
623	LHLDP1089GE00	J	Timer LED Holder	AA	501-12	HINDP2007GES A	J	Indication Plate (Inside the door) (VC-MH90)	AH
624	LHLHZ1914GEZZ	J	Fluorescent Display Holder	AE	501-13	JBTN-2590GESB	J	Button, CC	AC
625	PGUMR0007GEZZ	J	Stopper Foot	AC	501-14	JBTN-2591GES A	J	Button, CH/REC	AD
626	LHLDF1092GEZZ	J	Main PWB Holder	AD	501-15	LHLDS1010AJZZ	V	Door Latch	AB
627	LHLDP1143AJZZ	V	Cassette LED Holder	AD	501-16	QEARP0404AJFW	V	Earth Plate	AF
628	LHLHZ1893AJ00	V	Sensor LED Holder	AB	511	JKNBK1083GES C	J	Dial (VC-MH80)	AH
					511	JKNBK1083GES B	J	Dial (VC-MH90)	AH
					512	CBTN-2627GE02	J	Stop/Pause Button Ass'y	AG
					512-2	LHLHZ1918GEZZ	J	Button Holder	AE
					513	JBTN-2626GESB	J	Button, Play	AE

— End of Mechanical Parts —

— End of Front Panel Parts —

Ref. No.	Part No.	★	Description	Code
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SUPPLIED ACCESSORIES

ACCESSORIES

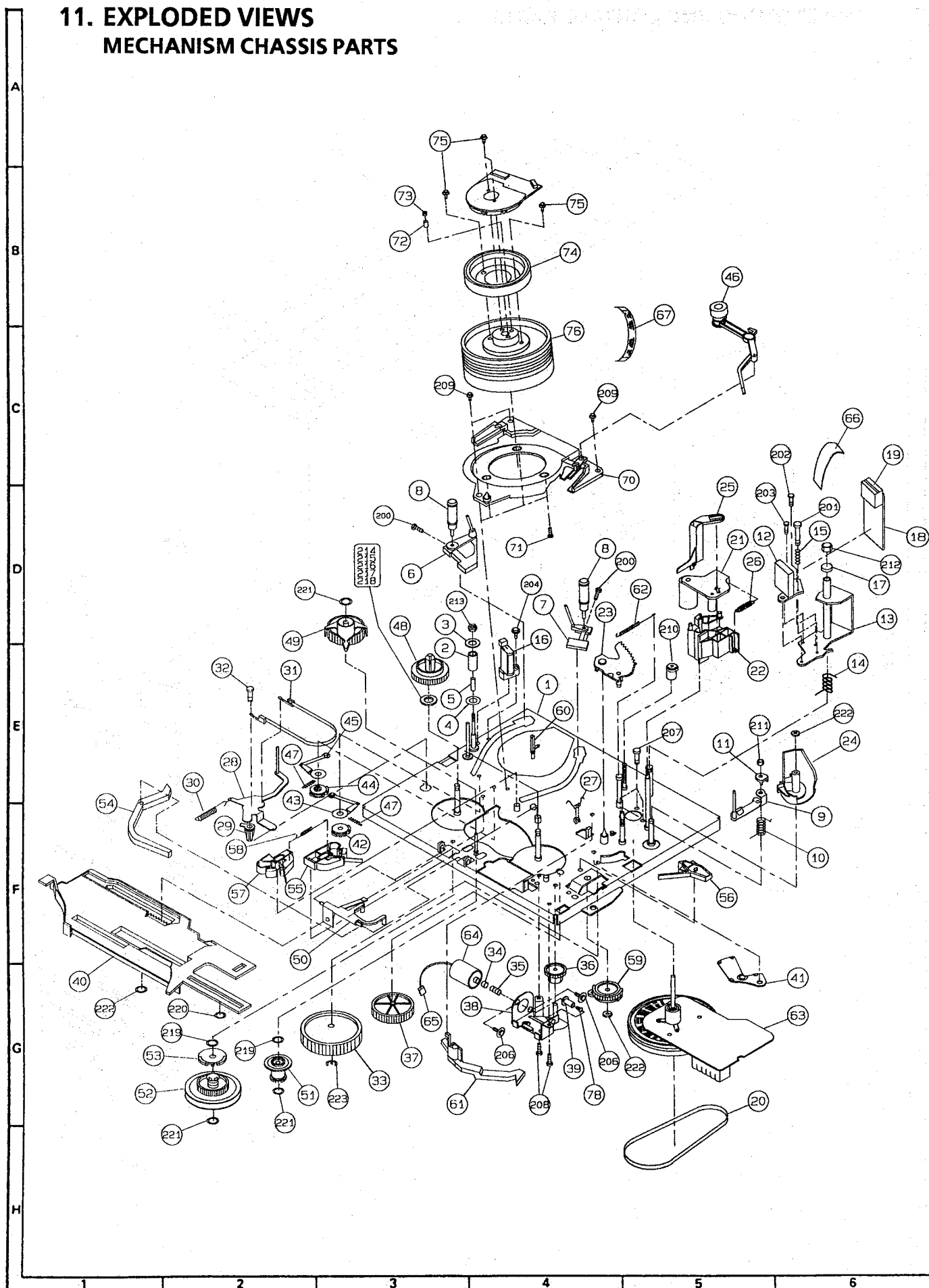
QCNW-2702GEZZ	J	75 ohm Coaxible Cble	AK
QCNW-7581GEZZ	J	AV Cable	AM
QPLGA0011CEZZ	J	AC Plug Adaptor (VC-MH90)	AF
RRMCG0034AJSA	V	Infrared R/C Unit	BD
93 G N T 0 4 5 7 2 2	V	Battery Cover, Infrared R/C Unit	AM

ACCESSORIES (NOT REPLACEMENT ITEM)

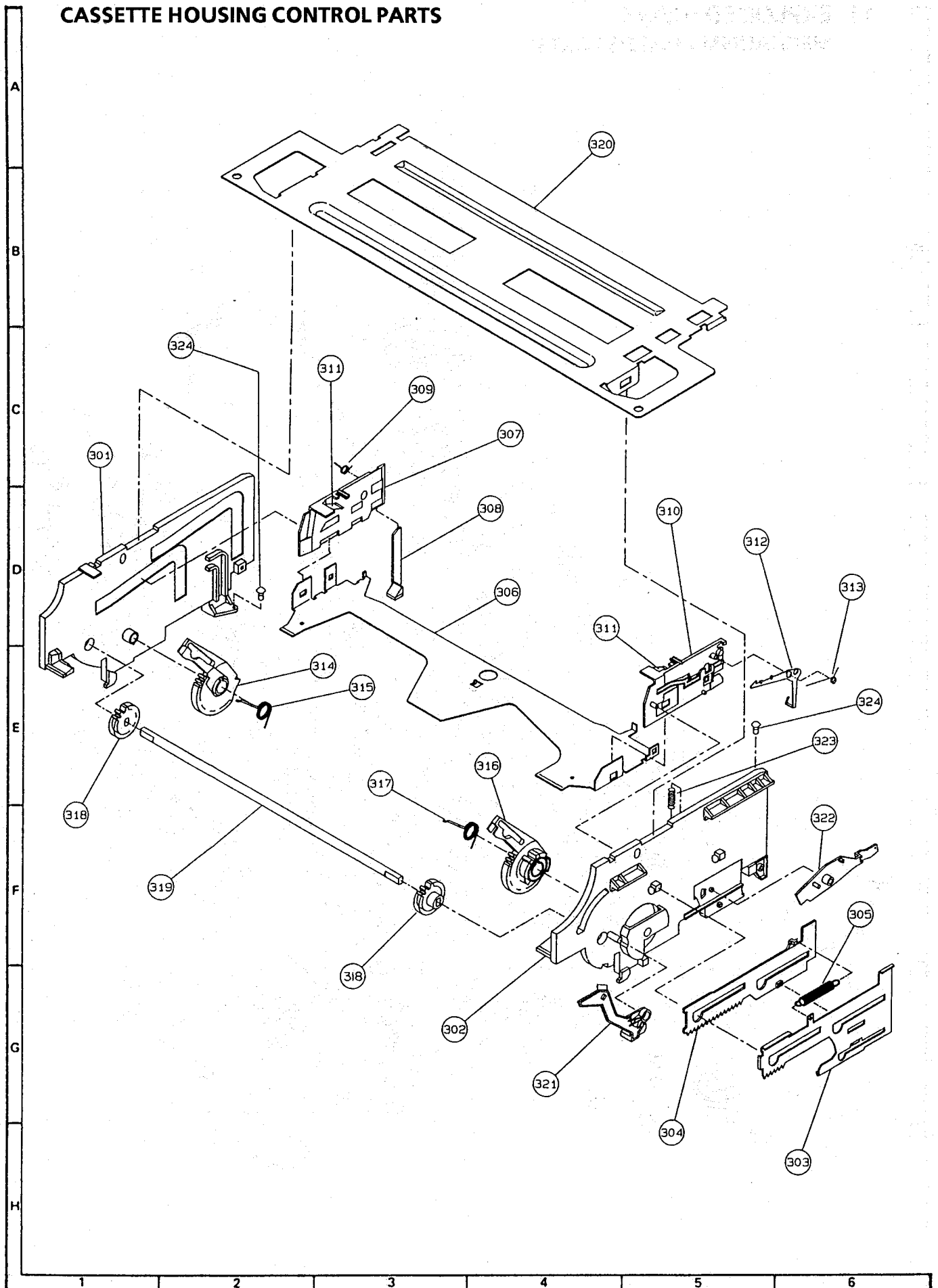
TiNS-2417GEZZ	-	Operation Manual (VC-MH80)	—
TiNS-2418GEZZ	-	Operation Manual (VC-MH90)	—

— End of Supplied Accessories —

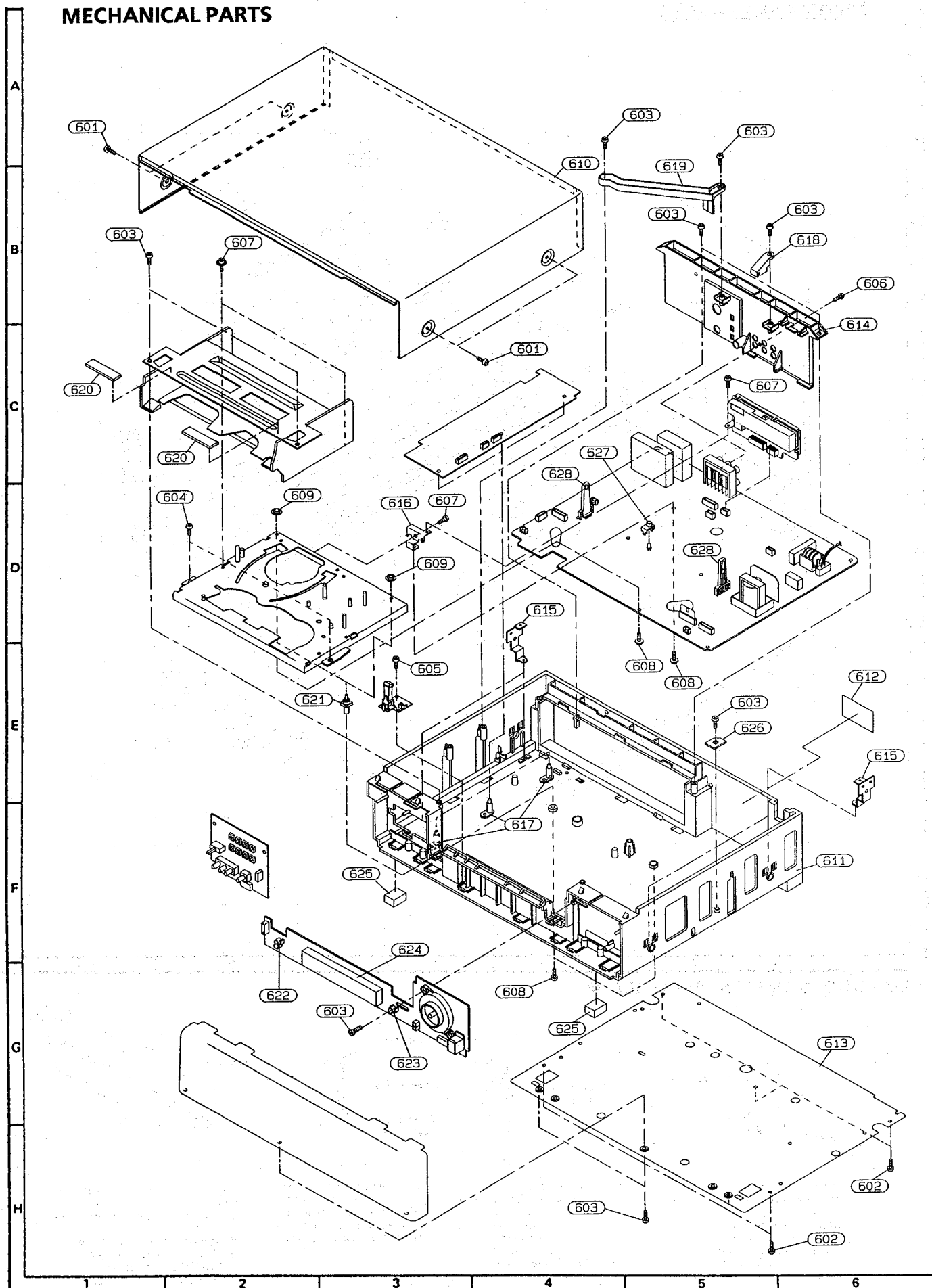
11. EXPLODED VIEWS MECHANISM CHASSIS PARTS



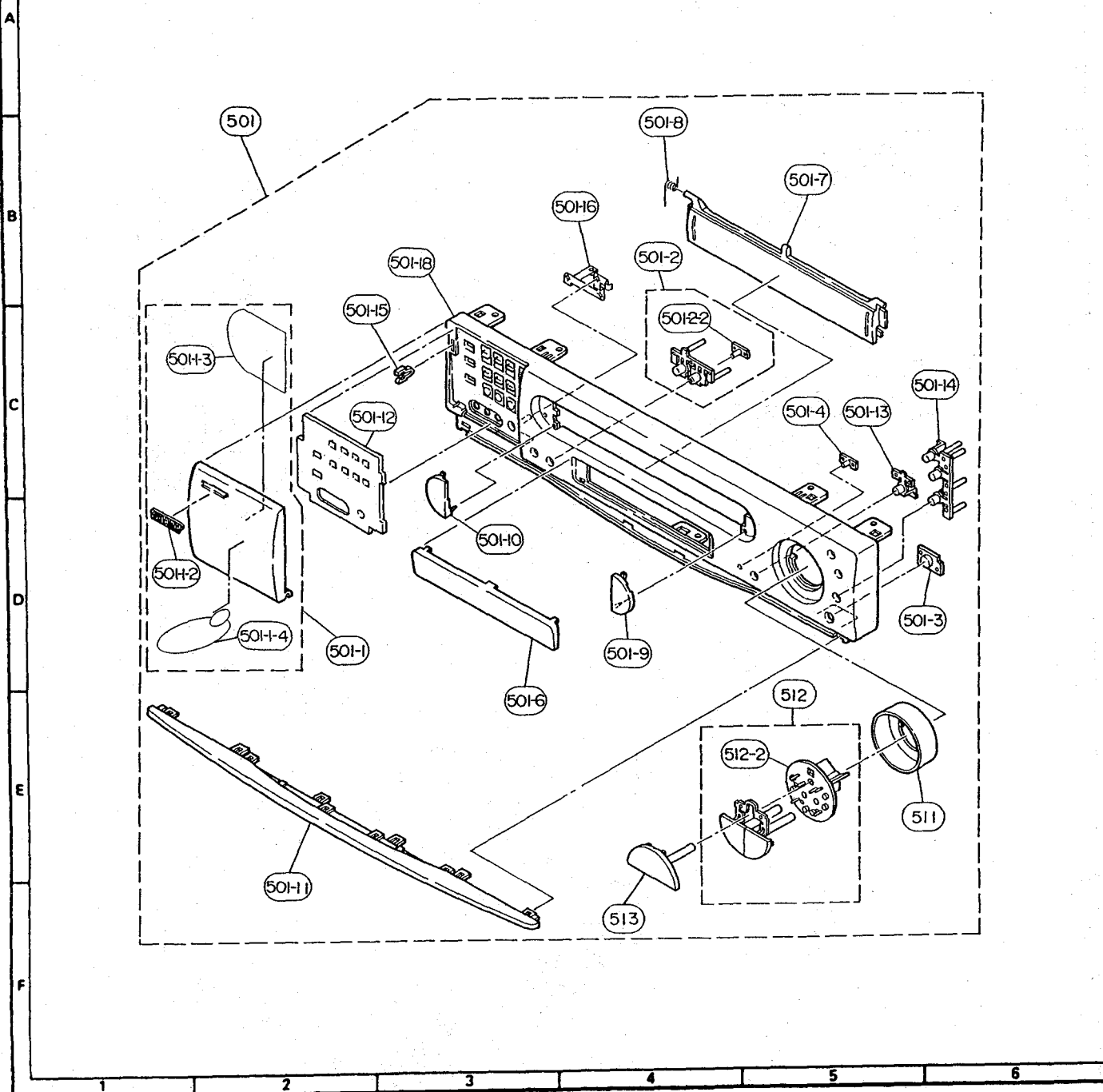
CASSETTE HOUSING CONTROL PARTS



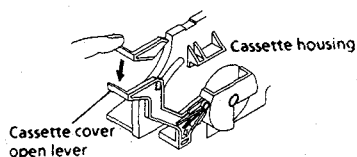
MECHANICAL PARTS



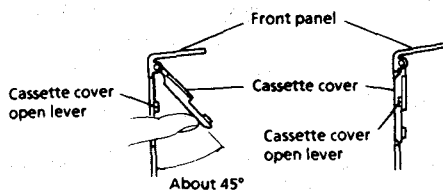
FRONT PANEL PARTS



PRECAUTIONS ON FRONT PANEL SET-UP

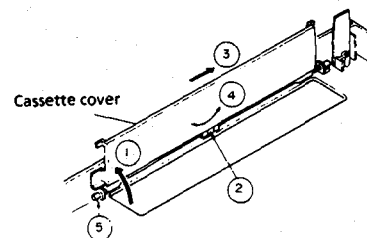


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lowermost). If it is out of position, push it down with a finger.



Keep the cassette cover about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.



Removing the cassette compartment cover.

- ① Open the cassette compartment cover fully.
- ② Remove the center positioner.
- ③ Slide the cover to the right.
- ④ Slightly bend the cover.
- ⑤ Draw out the left-side rod.

12. PACKING OF THE SET

● Setting position of the Knobs

RF Converter (VC-MH80)	at "E39" position	System Switch (VC-MH80)	at "B/G" position
RF Converter (VC-MH90)	at "E36" position	System Switch (VC-MH90)	at "I" position
Test Signal Switch	at "OFF" position		

★ Accessories

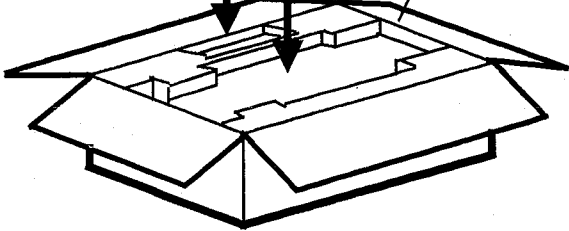
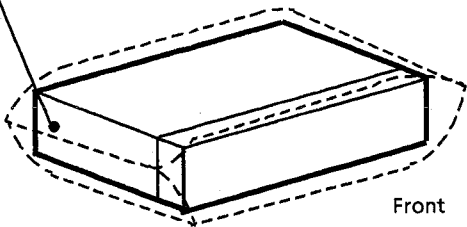
- ★ TiNS-2417GEZZ Operation manual (VC-MH80)
- ★ TiNS-2418GEZZ Operation manual (VC-MH90)
- QCNW-2702GEZZ 75 ohm coaxial cable
- QCNW-7581GEZZ AV Cable
- QPLGA0011CEZZ AC Plug adaptor (VC-MH90)

- ★ CPAKF0142GE01 (VC-MH80)
- ★ SAKA0141GE01 (VC-MH90)
- Polystyrene bag

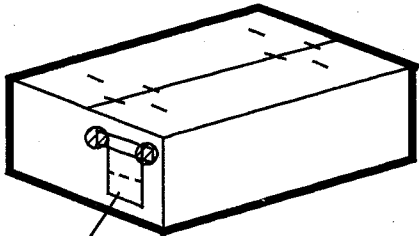
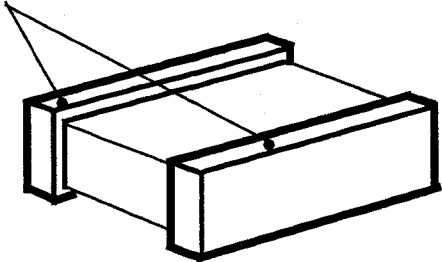
RRMCG0034AJSA
Infrared remote control unit

- ★ SPAKC2733GEZZ (VC-MH80)
- ★ SPAKC2732GEZZ (VC-MH90)
- Packing case

- ★ SPAKP0084GEZZ
Polystyrene sack



- ★ SPAKX0917GEZZ
Buffer material



★ Not Replacement Items

- ★ TLABK2871GEZZ (VC-MH80)
- ★ TLABK2870GEZZ (VC-MH90)
- No. card